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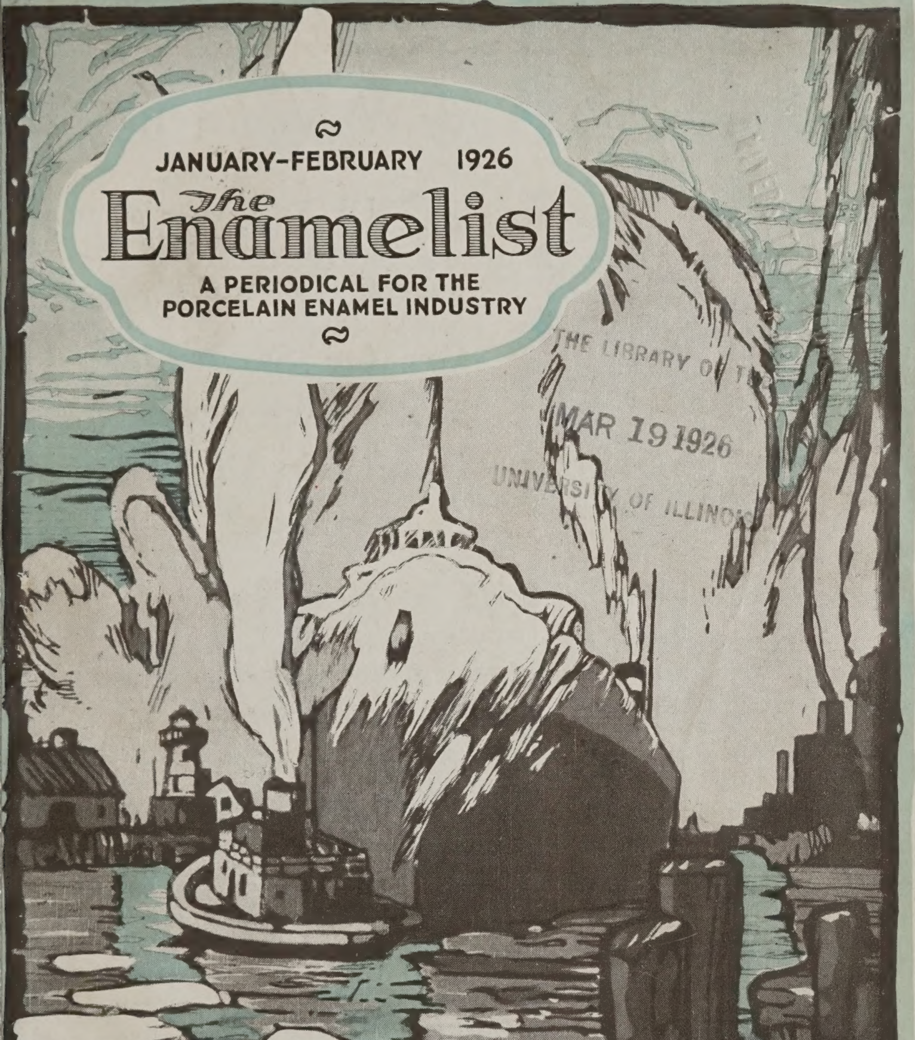

JANUARY–FEBRUARY 1926

The Enamelist

A PERIODICAL FOR THE
PORCELAIN ENAMEL INDUSTRY

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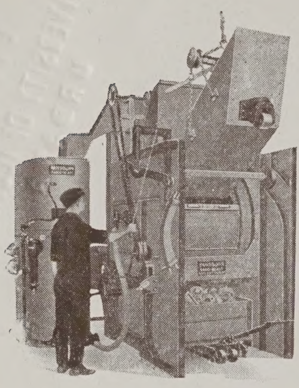

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The Enamelist

v.3²-4¹

A Trade Paper
for the Porcelain Enamel Industry
published by
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American Ceramic Society Atlanta Convention

IT is highly desirable and important for every person interested in the enameling business to attend the Annual Meeting of the American Ceramic Society at Atlanta, Georgia on February 8th, 9th, 10th and 11th.

The Enamel Division will have a number of very important conferences and certainly each member can pick up at least enough good ideas to pay for the cost of the trip. The chief value of membership in the Enamel Division is derived from the interchange of ideas and a complete program has been arranged in order to bring out as much discussion as possible on important subjects.

This year the Program Committee expects to emphasize the proposition of Control Tests, as it is only by complete control of different operations that our industry can really be placed on a standard production basis.

Here are a few of the questions which will be discussed.

1. Do you have a chemical analysis of the steel or cast iron used? How often is this made?

2. In pickling, do you use test pills or some method of titration? If not, how do you determine when more acid should be added or the bath renewed?

3. What raw materials in your enamels are controlled by analysis?

All the world's a screen, but few of us figure in the "close-ups."

644975

4. Is your smelter equipped with pyrometers or is temperature judged by some other means?

5. Is the grinding of your mills controlled by time, a revolution counter, or both? Is the fineness of grinding checked by a screen test?

6. Is the burning based on a strictly time-temperature control or left largely to eye judgment?

7. Do you have any tests to use on finished ware for adhesion, crazing, or acid resistance?

You can see that the proper answers to all of the above questions will be very valuable in your shop; so, we hope that you will have as many of your men as possible at the convention.

The headquarters will be at Atlanta Biltmore Hotel.

* * *

THE WAY OF THE WISE

There was a man in our town
And he was wondrous wise,
Whenever big conventions came
He was all ears and eyes.
With willing smiles he'd pay his fare
To north, south, east or west,
Then hop into a Pullman train,
Inspired with greatest zest.
And when his eyes had seen it all
And ears could hear no more,
He'd hop back in the train again
Much wiser than before.—*Glass Container*.

* * *

The Coonley Manufacturing Co. of Chicago, Ill., are contemplating building a continuous tunnel enameling furnace. This is the second to be installed at this plant.

* * *

Recent news dispatches indicate that the International Moulder's Union and the Stove Manufacturers' Associations have just signed a wage agreement renewing the old scale. This is the thirty-eighth year agreements have been made without a strike. According to the scale $7.25 is the minimum day rate with piece work rate differing in different localities.

* * *

In Oakland there is an enameling furnace burner who claims it is unnecessary to use a pyrometer on a furnace—in fact, that it is easy to blindfold yourself and tell whether a piece is burned or not—*simply by the sense of smell.*

He claims if it smells green, it is burned properly. If it smells brown, it's overburned and if it smells pink it is not burned enough. Now some of you fishermen or golfers, tie that story. It's a true story.

Annual Inventory Period Slows Up Enameling Business

THE enameling business during December showed a slight decrease from November business. This was due to the annual inventory period, end-of-year furnace and general plant repairs and general slow-up during the Christmas Holidays.

The returns showed that out of 175 furnaces reported 127 furnaces were operating to full capacity. In fact several furnaces were being operated day and night and some by two and three shifts during this period. This indicated that the entire industry was operating at approximately 73% of capacity.

The following remarks on the cards returned will verify our statements concerning the general inventory and repairs being made during this time.

"Business slow account inventory by customers."

"Closed for alteration in equipment."

"Closed down for inventory and repairs."

"Start up three furnaces next week."

"One furnace down for repairs."

"Plant down for inventory. Expect to start five furnaces in a few days."

However, many of the remarks indicated the depression will be temporary and we know our February report will show our industry operating at top-notch capacity again.

"Business outlook very good."

"Going strong."

"Two furnaces are running day and night. Two days only."

"Prospects for 1926 are excellent."

"300% increase for 1926."

"Operating full time and preparing to install another furnace."

"Every indication of a 10% advance over 1925."

"Future looks good."

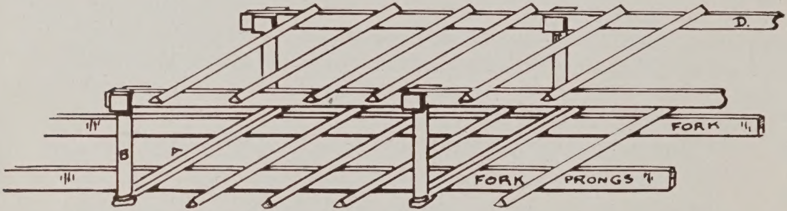
Watch for our report in the March issue.

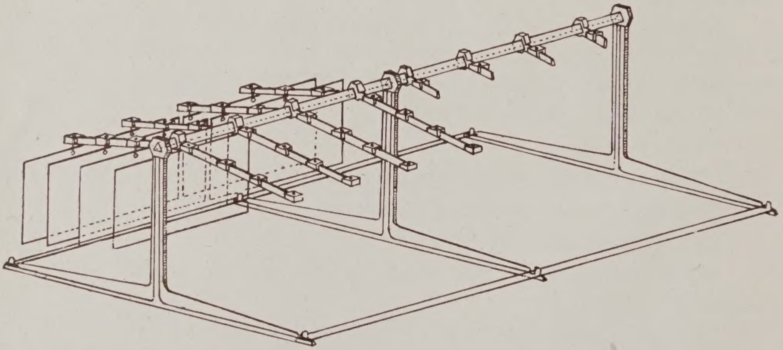
Strange, but the hen-pecked man often seeks solace in chickens.

Greater Furnace Production

AS the demand for enameled parts increases, many factories are handicapped by lack of furnaces or by lack of room to build additional furnaces. In this Country, it seems to us, whenever there is a real demand for something, there is always some ingenius individual who steps up and fills the demand.

In this case, the wet process enamelers solved their lack of furnaces by simply getting more work out of their present furnaces. The Ferro Enameling Company of Cleveland was one of the first to use double and later triple decking of work in their furnace. About the same time, Carl Mehling of The American Radiator Company started piling up loads five or six high. The increased production was simply remarkable and we believe





Unfortunately, the I's in politics don't permit a man to see his own finish.

today that with Double Quick Forks and Double and Triple Decking, one furnace will turn out as much as five furnaces would produce five years ago. That's real progress.

The sheet steel enamelers were quick to take the hint for greater production and the Wrought Iron Range Company promptly produced a Hanging Rack so that steel parts could be hung in the furnace. It's obvious that you can burn much more work by hanging rather than burning on points. You eliminate point marks entirely, so for Double Faced work, this idea is particularly good. For any work, however, it will increase production.

Ideas like these are fast putting the enameling business on an efficient basis and if any of our readers have other or better plans for increasing furnace production, we would appreciate hearing from them.

* * *

The many friends of Major Wilfrid Mavor, who is associated with the Ferro Enameling Supply Co., will be interested to know of the new book recently published by his father, Prof. James Mavor. This book is entitled "Niagara in Politics,"and is published by E. P. Dutton & Company. We are giving a review of this book, as follows, taken from the December 26th issue of *The Independent:*

"Professor Mavor, whose massive "Economic History of Russia," recently published, seems destined to preserve his name many years after he passes from this scene, has turned from his academic researches to a courageous piece of literary journalism. After wrestling with the woes and wrongs of a nation half a world away, he now proceeds to battle against error on the home front in his own province of Ontario.

This critique of the Ontario Hydro-Electric Power Commission will be read with close attention by both the champions of government operation of public utilities and its opponents. Its interest is by no means confined to Canada. Niagara Falls is the reason for Hydro's being, and Niagara Falls is half American.

Professor Mavor makes it clear that he has no quarrel with public ownership, providing such ownership has been honestly acquired. But public ownership does not necessarily imply public operation. In Ontario, as here, public operation comes to mean political operation. His indictment of Ontario Hydro is two-edged; he challenges the honesty of the methods by means of which the Commission gained its monopoly, and he challenges, also, the efficiency of Hydro's operations and the correctness of its accounting.

The high scholarship of this author and the deadly array of facts which he presents combine to make a book which cannot be disregarded in any argument on government ownership and operation of public utilities."

Love must be blind, because the divorce courts prove he doesn't always shoot straight.

What I Expect to Do

By

William Feather

THE time is ripe for someone to put the American business man into a novel, and draw a true picture of him. If it is not done soon, I expect to try it myself.

In "Babbitt," Sinclair Lewis gave us a cynical study of a certain type of business man, the type that is the object of the aesthetes' sneers.

But the type of business man whom I admire has not yet been captured by any writer of fiction.

In the first place, the business man I have in mind is a creative genius, a natural leader, a developer, a man of initiative and charm, a realist.

He is conscious of his power, yet he has no desire to abuse it. He knows the weaknesses of the mass of human beings, yet he has no desire to exploit them.

He finds joy in doing his job better than anyone else is doing it. He takes pleasure in helping other men to succeed with him. He is stimulated by the fact that his product broadens and intensifies the lives of thousands of users.

He may be a publisher, an automobile manufacturer, a nurseryman, a railroad president, a meat packer, or a maker of enamels.

Just what these men are doing to make life more worth while to millions of people must be explained. The processes of modern business must be made clear.

It would be easy to find a thousand men who might do for the leading character of this novel.

The book should be an honest, straight-forward story of the career of one business man. When they had finished the book readers would say, "Why I know dozens of men just like that, but I never thought of them in that way before!"

Procrastination is driftwood in the stream of life that will eventually dam it up.

Preparation of Sheet Iron for Pickling

By H. L. Brooks, V. P.
The Ferro-Enamel Supply Co.

THE old method of scaling or annealing sheet iron before pickling is rapidly giving way to the cleaning method in a strong detergent. In some cases it is impossible to clean steel for enameling purposes in any other way except by bringing the temperature up to a point at which grease and oil can be burned out. This has been overcome in most cases by the use of so called metal cleaners.

The scaling method is rather an expensive operation both in consideration of labor, equipment and fuel. It also is likely to warp sheets. Every effort should be made in the press room to eliminate the use of insoluble lubricating material. Many cleaners have been developed and great claims made for their ability to dissolve anything; but as yet we cannot say that a universal cleaner has come to our attention although we believe each individual case can be taken care of and developed to a point where a metal cleaner is practical.

With the modern methods of pickling, using acid resisting baskets to hold the ware, traveling from one tank to the next continuously, is highly desirable. Cleaning metal without the use of baskets or some continuous operation of handling it is very expensive.

It is practically impossible to procure steel parts in many plants entirely free from mineral oil. The action of a metal cleaner is primarily that of saponification. This term is ordinarily applied to an action which changes fatty acids to soap. Soap practically speaking is the salt which is the product of a reaction between a strong alkali and a fatty substance. It is desirable to have this so called soap a water soluble material.

It is not always certain when a sheet of steel is taken out of the cleaning solution showing an unbroken film of the liquid running off from it that the steel is properly cleaned. While the grease on the steel may be perfectly saponified the resulting soap on the surface may not be easily water soluble. When the steel is immersed in the rinse tank, all of the soap should be removed

Beauty may be only skin deep, but that's too deep for some men to see through.

from the surface. If an insoluble soap still adheres to the metal when it is immersed in the acid solution this soap will immediately be converted back to an oil by an acid reaction insulating the surface of the steel from the action of the acid. When the ware is rinsed in the second rinse tank, the film of water running off from this will be broken showing the presence of oil on the surface. This is a sufficient indication of subsequent trouble in the enameling operation which is to follow.

A proper cleaning solution should not only be strictly alkaline but should be of the proper composition to remove all oils and greases on the sheet. After the correct solution is decided upon and the operation standardized, no trouble should result unless a different lubricant is introduced in fabrication of the steel parts.

Wooden tanks for cleaning solution are quite unsatisfactory owing to the fact that strong alkaline solution removes the ligneous content of the wood and in combination with the heat in time causes the wood to become spongy and a rapid deterioration of the tank results.

A steel tank is the best container for the cleaning solution as there is practically no action of cleaning compounds with Ferrous metals. It is absolutely necessary in efficient cleaning to keep the cleaning solution boiling hot at all times. It is also sometimes desirable to agitate this solution with air. Air can be supplied through perforations in the side of a pipe running along the bottom or near the bottom of the cleaning tank. Very little air is required for this agitation; but there should be a sufficient supply to keep the solution constantly in motion. This motion can also be accomplished by the heating coils which should be placed on the sides of the tank near the bottom. If these steam coils are kept hot enough to allow the solution to boil gently at all times, it is our opinion that this agitation ordinarily is sufficient.

The matter of a standard cleaning substance cannot be generally recommended as in some plants a different concentration and a different cleaner is necessary than in others. Generally speaking the fault of cleaning solution is more likely to be caused by too much cleaner in the solution rather than by too

The difference in having a vision and seeing things lies in what you drink.

little. When a new solution is made up, for instance using 4 oz. of cleaner per gallon of water a sample of this solution should be immediately set aside. After the first days run, if this cleaner is working satisfactorily, this sample should be tested for alkallinity, and used as a standard for subsequent solutions. While this is not a true test of the total cleaning power of the solution the alkalinity is a guide, and can be used for regular testing of the solution as long as the chemical composition of the cleaner remains the same. After the first days run a sample should be taken and again tested for alkalinity. Sufficient cleaner can be added to this sample to bring the alkalinity up to the original strength. The amount of cleaner added to this sample should be accurately weighed and cleaner should be added in the same ratio to the cleaning tank. If this is done each day it will soon be determined how much of the cleaning compound should be added per day to keep the solution up to normal strength.

The cleaning solution should be discarded periodically and should not be used after the salt concentration becomes too high, inasmuch as a waste of cleaner results when this condition exists. We have not as yet worked out a procedure for determining this condition but the enamel shop superintendent will soon become acquainted with the proper time to discard this solution after familiarizing himself with its use.

Many investigations should be made on this subject as cleaners are, at this time, of vital interest to all enamelers striving toward lowering production costs.

* * *

Promotions of two officials of the United Alloy Steel Co. were announced recently. The changes were the result of the resignation of E. A. Langenbach as president. He will continue as chairman of the board, but will be succeeded as president by George H. Charis, formerly vice president and general manager.

L. G. Pritz, formerly vice president in charge of operations, will succeed Charis.

Company has sufficient unfilled orders on hand to run plant to capacity throughout the first quarter.

* * *

It is reported that J. H. Burman has resigned as general superintendent of the Cribben & Sexton Company, Chicago.

Don't judge by appearances—even a bald head is apt to have something inside.

Survey Shows Increasing Popularity of Enameled Kitchen Ware

THE enameled ware industry as a whole, and more in particular the cooking utensil division of the business is greatly pleased over the increased popularity of its product, both in this country and abroad.

Competitive utensils made their appearance abroad several years in advance of their introduction here, and due largely to enormous advertising expenditures, became popular for a time. That situation has changed greatly in recent years, and it is more than interesting to note the "comeback" of the enameled utensil and its now universal use across the sea.

The change which has been occurring in this country for the past two or three years is likewise significant and can be easily illustrated by citing the changing tendencies in the larger department stores. Not so long ago "sales" in department stores of the competitive utensils were frequent and unusually successful. It was difficult to interest many of the store buyers in large enameled ware sales.

Today, that condition in most sections of the country is reversed, and large sales of enameled utensils are put on with a greater degree of success than ever before, and regular open stock business is increasing rapidly. Thus, history is repeating itself here as abroad.

The housewife has had the opportunity of comparison and has acted accordingly in her purchases.

The actual buying tendency today bears out the results of a survey recently made for one manufacturer of enameled kitchen utensils. Close to one thousand personal calls were made among the trade and consumers; several hundred house-to-house. Answers to questions asked were carefully noted and then tabulated. The final report proved a greatly increasing consumer and dealer interest in enameled ware—even beyond expectations.

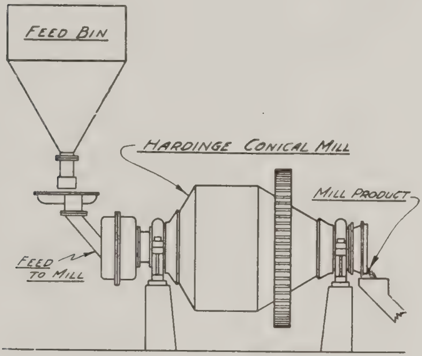
The enameled ware plants are busy, and outputs, particularly of the better class of wares, are greatly increased over a year ago. There is no question but what enameled ware has come definitely and permanently into "its own" again; more solidly entrenched than ever.

The middle-of-the-road policy is safe in these days of feverish transportations.

Grinding Enamel Frit

The Hardinge Way

(Continuous System)



Operating in open circuit for grinding either wet or dry.

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Scientific knowledge, great resources and complete manufacturing facilities are the contributing factors to the

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An Era of Combinations

THIS is apparently an auspicious time for combinations in the industrial field. In fact, mergers and combinations are a natural result of present day business tendencies.

The enameling field offers a fertile field for many mergers. Certainly there are many combinations of kitchen ware plants which would be economically sound. Destructive and unintelligent competition would be eliminated, selling costs reduced, production improved and costs generally reduced.

The stove and range companies which contribute so much to the prosperity of the enameling industry also offer an excellent opportunity for mergers.

American Stove Company is an excellent example of an intelligent combination of smaller companies and the success of this company should be an inspiration to others.

The Detroit Stove Works absorbed the Art Stove Company sometime ago and recent newspaper reports indicate the same company completing a merger with the Michigan Stove Company. The advantages of the merging of these fine Detroit Companies are obvious.

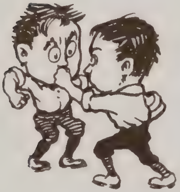
In various parts of the country there are other natural fields for consolidations. Pennsylvania has too many small companies. Great economies could be made by joining some of them. New England offers a good field for mergers. St. Louis would be benefited by one tremendous company with all the strength and power that would be obtained. Evansville and Louisville offer another opportunity. We wonder who will be the financial and executive power to develop this idea.

* * *

In the last issue of *The Enamelist* we told of the death of Mr. Longfellow of the Standard Gas Equipment Corp., in a train wreck on November 12th. We are sorry to learn that T. A. Wry of the General Electric Company was seriously injured in the same wreck. He was in the fatal car in which four of the G. E. executives were killed. It was necessary to use an acetylene torch in order to pull Mr. Wry from his metal prison.

He was in the hospital for about a month and is now recuperating at his home, 409 Broadway, Lynn, Mass. We have a very fine letter from Mr. Wry in which he states that his courage is good and he is looking forward to an early return to work. We wish for him a complete and rapid recovery.

* * *



KNEW HIS CAPABILITY

Butcher—"My son, the one that used to help me in the shop here—he's gone in for boxing. Won a championship, too!"

Customer—"Ay, I remember him. I suppose he'll have won the light weight championship."

—*Boston Transcript.*

Some people don't believe half they hear and others don't hear half they believe.

SUBMERGE your parts to be enameled into a tank full of Bruko Cleaner, and you will see Bruko never lets go until every speck of oil and grease is removed from your ware.

Write us today for a generous sample to try out.

The Bruce Products Corp.

Detroit - Windsor, Canada
Chicago - Cleveland

BRUKO

The law should compel people, like autos, to wear dimmers when they're too bright.

Banker Calls Trade Associations Hope of Consumer

TRADE associations are the hope of the consumer for lower costs and higher standards of living, declared O. H. Cheney, vice-president of the American Exchange-Pacific National Bank, before the Sheet Metal Ware Association in New York on December 8th. Speaking on "A Banker's View of Trade Associations," Mr. Cheney pointed out that until a few months ago the attitude of the Government was unfortunately legalistic and more concerned with the letter of the law than with the public interest it was designed to protect. He also declared that unrestrained competition has been more harmful to business and to the public than have any actions of trade associations.

"The time is not far when a business man's membership in trade associations will be an important factor in his banker's judgment of his credit rating," said Mr. Cheney. "Trade Association membership is a measure of character, because it shows the member's ability to get along well with others. Trade association membership is a measure of intelligence of the member's business methods, because he is trying to eliminate competitive waste and to use cooperation as an economical promotion weapon. Trade association membership is a measure of the soundness of the industry because it is doing something for the stability, efficiency and economy of production and distribution.

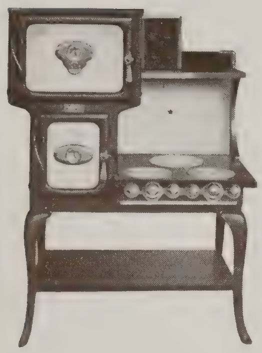
"Competition has come to mean almost anything from advertising to incendiarism. Unrestrained competition has been the cause of practices which are much more dangerous to business and to the public than any instigated by trade associations. In fact, America has discovered that just as liberty could become license and the pursuit of happiness could become crime, so trade freedom could become 'unfair competition'. But leaving out of consideration the extreme competitive practices which approach the criminal in intent or effect, the economic waste of so-called competition is appalling! It is undoubtedly the greatest burden of all which are afflicting both the producer and the consumer.

"Ignorance is the cause of economic waste. Ignorance of the nature of business fluctuations is the cause of depressions. Ignorance of the facts of supply and demand is the cause of troubles which afflict the separate industries. Ignorance of efficient business methods is the cause of individual failure. In its earlier decision on trade associations the Government set up ignorance as the dominating power in industry. It was almost sacred. It was almost a patriotic duty of business men to be ignorant—they were forbidden to eat of the fruit of the tree of knowledge. But the ban is being lifted and the trade association can now go on with its great work of dispelling ignorance and eliminating waste.

"By cooperation through sound, active trade associations business could cut prices, not raise them. By cooperative study of the market, supply and demand operations could be stabilized. By cooperative research in production, costs could be cut. By using the money and energy now wasted in unnecessary competition, quality could be improved. The trade association is the hope of

Wrestling matches remind one of corkscrews—they are generally crooked.

Increasing demand attests to excellence



The enameled parts that pass inspection and go out of the shop bring back profits. It takes the profit on the sales of several good enameled parts to pay for one the inspector consigns to the scrap heap.

That's why the demand for Toncan Enameling Metal has steadily increased during the last few years until tens of thousands of tons are in use today. Sound, and as free from impurities and defects as it can be made. Toncan Metal, properly used, will reduce seconds sufficiently to justify its use instead of ordinary sheet metal.

Specially selected raw materials, careful attention to every detail in the melting and rolling, and most rigid inspection at every step, are the precautions used in producing Toncan Metal.

Send for samples and make comparative tests.

TONCAN METAL

United Alloy Steel Corporation, Canton, O.

New York
Syracuse
Cleveland
Chicago
Detroit
Pittsburgh
Philadelphia
San Francisco
Indianapolis
Portland

TONCAN ENAMELING SHEETS

Talking about jobs—people who believe in luck should make good waiters.

the consumer. That is why, as a banker, I believe that the need of the nation is better, stronger, more active, more intelligent, more public-spirited trade associations. Only through them can there be better business men and better business."

* * *

Master of Arts

By Charles S. Kinnison

Most folks would say that Smithy had
A job that wasn't much.
For Smithy was no college lad—
Had no degree nor such.
The only checks that Smithy drew
Were those made out of brass,
For use when he had work to do—
And one served as a pass.
But yet I claim that in his job
(This job that wasn't much)
That Smithy rose above the mob—
He had the craftsman's touch.
In Smithy's hands a tool became
A sort of magic part—
In his two hands this man could claim
The masters of his art.
Where Smith was given work to do
He never shirked the task.
He gave each job the best he knew,
With nothing under mask.
And when a job of his was done
His eyes would shine with pride.
He viewed the job as something won—
His heart was satisfied.
A man of Smithy's hands and heart
Deserves a real degree.
For no man better fills his part
Or earns his pay, than he.
He has no letters aft his name,
Like M. Sc. in A.,
But he's a master just the same
In his, the craftsman's way.

* * *

We are delighted to be able to announce that *The Enamelist* will again give a Dinner, during the American Ceramic Society Convention, to all of the members of the enameling industry attending the convention. In case you have not already received your invitation, we here extend you a cordial invitation to be with us. The dinner is to be held at the Capital City Club of Atlanta, Monday evening, February 8th, at 6:00 o'clock.

Some men are never willing to help themselves unless a bottle's before them.

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PREPARED OXIDES
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STEEL & CAST IRON
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We match any special shade required.

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The chap with the get-up-and-go generally has some staying qualities, too.

"Reds"

By C. E. Carpenter

Mr. Carpenter, Editor of Houghton Line, has given us permission to use his article on Communism, which follows, and which appeared in a recent issue of Houghton Line:

"Over 40 years ago I joined the socialistic movement in America, having become a victim of the socialistic propaganda of a school professor.

Having once been bitten myself, I have never lost sight of the danger of the dog that bit me.

Why it is that intelligent employers of labor and those who are associated with labor, can complacently say that Communism in America is a nightmare, and something which we merely advertise when we talk about it, I can't comprehend, unless it be that for some inexplainable reason, such people know nothing about Communism, and care less.

A "Red" is a person who is identified with any revolutionary organization, having for its object the overthrowing of existing governments and the abolition of the existing laws and institutions.

Bolshevism is an organized, revolutionary movement, based on force, violence and deception, or any other method which will accomplish its purpose; no matter how low or how degrading, anything that helps the cause of Bolshevism is Bolshevistically legal.

Bolshevism has for its purpose the conquest of the entire World, and the subjugation of all of the nations under a Bolshevist Despotism.

Communism is an economic theory, which is the pretended object of Bolshevism. The Communistic form of government is known as the Soviet.

The Third International is the power behind the international "Red" movement, and is an organization with headquarters in Moscow, Russia.

It is the source of organized Communistic propaganda, now being spread over the World in general and the United States in particular. It directs the Communistic organizations in Russia and all other countries. It is under the control of a

OUR PLEDGE

IN 1926 we will spend even more money and effort in research and experimental work so that Ferro Enamels will constantly improve.

We thank you for your help in making 1925 our biggest enamel making year. Our organization is bigger—our output is bigger and our desire to serve you is bigger.

Buy from Bob

The Ferro Enameling Company
Cleveland, Ohio

Confidence is lost when fault is found.

very few men, who are in reality the direct heirs of the anarchists and Communists of the last century. They are the men who now misrule Russia and they are the men who are endeavoring at the present time to increase their power by making it a World power.

One of the aspirations of the Third International is, of course, to overthrow the existing government of the United States. This is not denied by the "Reds," but, on the contrary, it is their boast.

"The Ten Commandments of Communism" set forth six principal aims, which are as follows:

Abolition of private property
Abolition of all right of inheritance
Abolition of the family
Abolition of marriage
Abolition of religion
Abolition of cities and towns

There are no guaranteed individual rights—no security of the home; no freedom of the individual to worship according to his conscience; no right to the possession of any property, or to the privilege of rearing his own children—under the Communistic dogma.

The "Red" movement aims to support the passage of every law which will make the people dissatisfied; which will curb the personal liberties of the people; which will cause the people to protest and rebel against the government. For that reason the "Reds," threw their entire support to the Prohibition laws, knowing full well that the passage of those laws would bring about a general discontent among certain classes of people, which those laws are well-known to have created, and there is probably no single movement of the "Reds" in the United States that has brought so many converts to Bolshevism as the Eighteenth Amendment and the Volstead Act.

The Third International declares that employers and employees have nothing in common, and that each must fight the other. Of course, there can be only one result from constant opposition between employer and employee and that is: the total destruction of the present economic structure of society.

It is no wonder automobiles are tired the way they are driven to death.

B. F. Drakenfeld & Co., Inc.

Established 1869

IMPORTERS AND MANUFACTURERS OF

ENAMELERS' CHEMICALS

Antimony Oxide
Codmium Sulphides
Chrome Oxides
Cobalt Oxide
Copper Oxides
Manganese Dioxides
Nickel Oxides
Nickel Salts
Tin Oxide, White

Main Office: 50 Murray St. New York

The evidence in a suit case often means a trip for the prisoner.

It frequently happens that employers of labor are amazed at seemingly conscientious strikers absolutely ignoring individual rights. The answer to this is that these strikers have been taught by the "Reds" that individual rights are evils and should be obliterated.

Under the guise of idealism and liberalism, agitation is being carried on in our institutions of learning. There is a widespread agitation in many sections of the country in favor of student control of public schools, which agitation is originated and supported by funds supplied from Moscow, and the strikes which are being formed by the student body are merely a method of "Red" propaganda.

This movement is not only financed by the Third International, but it is openly supported by some of the most eminent, radical socialists in the United States, including Mr. Upton Sinclair, of Pasadena, California, who is undoubtedly America's foremost socialistic propagandist and who is unique in the fact that he has the courage and the guts to come out in the open to wage his war against society, which, of course, proves that he is one of the very few sincere propagandists.

I do not think, however, that Mr. Sinclair is very much in sympathy with the conditions in Russia at the present time.

The movement of the Third International, while decrying the existence of classes, aims to set up the most terrible, wicked, persecuting, brutal, unconscious class of rulers that the World has ever known, and if you want a sample of the goods which the Third International is proposing to sell, I respectfully refer you to the Russian Soviet government of today.

All of these things are well-known to exist.

The United States secret service can even tell the names of many of those who represent the Third International in America.

The policy of the "Reds" is secrecy; they aim to avoid all publicity; they keep their movements from the general public.

However, because their policy of surreptitiousness is successful and the general public is not well-informed as to the activities and growth of the "Red" movement, we should not conclude that Communism in America is merely a nightmare."

A lot of doctors who are not quacks wear duck suits.

Announcing the

KLEER-HEET

OIL-ELECTRIC FURNACE

for vitreous enameling and similar operations

It has all the advantages of the electric furnace as to simplicity of control, temperature regulation and muffle conditions, yet operates at approximately one-quarter the cost.

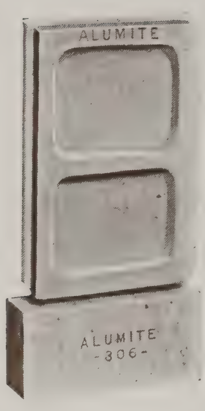
Your driers may be heated by the flue gases or we are in a position to build special driers for use in connection with this furnace.

A copy of the new catalogue now being prepared describing this furnace, is yours for the asking.

CUNNINGHAM FURNACES, Inc.
Port Huron, Michigan

CUNNINGHAM FURNACES, Limited
Sarnia, Ontario

Don't confuse bumps of knowledge with a swelled head.



ALUMITE

MUFFLES

will enable you to meet Competiti
by Reducing your Burning ar
Maintenance costs to a Minimu
ALUMITE Muffles are manufa-
tured in high Aluminous Clay, Si-
con Carbide, Sintered Aluminu
Oxide and Combinations of the abov

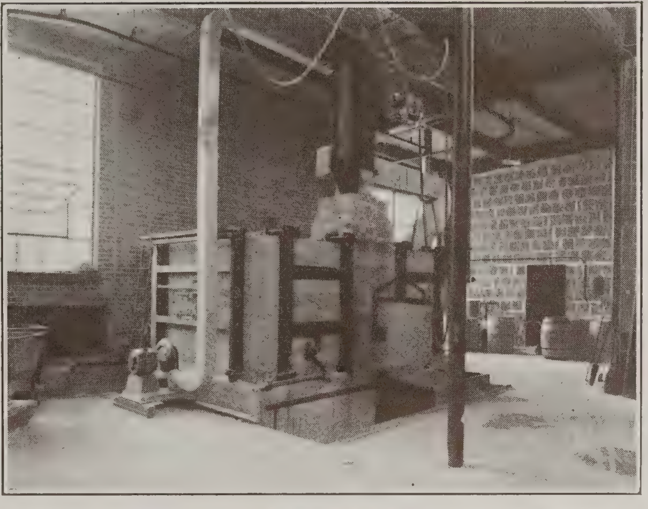
With 38 years of experience b
ance to you in reducing your maintenance cost and e
ing Department is at your service. Consult us.

Send for Bulletins o

THE MASSILLON

(Founded by

On the Lincoln Highway
Convenient for Truck Delivery.



Data shows that ALUMITE Smelter brick has increased the life of Smelter Linings from 5 to 6 times, in some plants during the past year. They are reducing Smelting costs in both Stationary and Rotary Smelters. Send us the dimensions of your Smelters for suggestions.

k of us in serving the needs of the Enameling Industries, we can undoubtedly be of assist-
nating costly production losses. Our Engineer-

1 and 22.

FRACTORIES CO.

Hipp)

MASSILLON, OHIO

Nineteen Twenty Six Enameling Business

FROM year to year we have attempted to point out what the enameler might expect during the ensuing year. So far, our prophecies have been fairly accurate and we want to go on record again for 1926. We believe that it will be the most prosperous and the busiest year the enameling industry has ever known and we base this belief on the following reasoning.

Each year, for many years, the stove industry has planned to enamel more parts on individual ranges and their business has grown in the number of all enameled ranges. There is no reason why this should not continue during this year. In addition, more and more stove companies are enameling soft coal, and other heating stoves and are using large quantities of enameled parts in a field in which no enamel was used before. This will undoubtedly continue and increase during the present year.

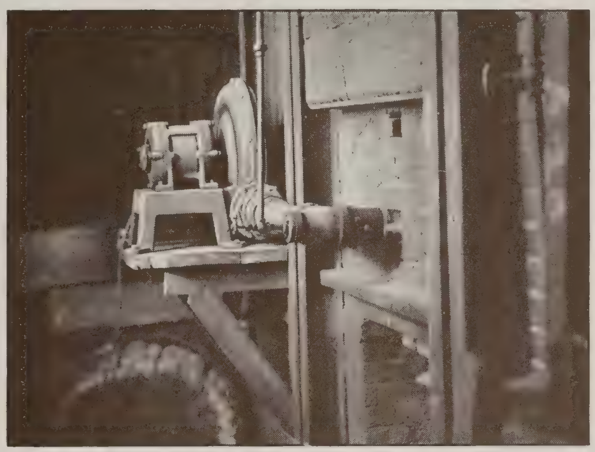
The refrigerator companies already see the value of porcelain linings and in many cases, porcelain exteriors rather than wood. More and more refrigerator companies are building their own enameling plants, which means that they will push the sale of porcelain finish more than ever before.

In the general business field, all leaders prophesy fine business for 1926. Alfred P. Sloan, Jr., President of the General Motors Corporation says, "The first half of 1926 will be a period of general prosperity. Employment is large, prices are relatively stable, transportation facilities ample."

Babson says, "Business is entering 1926 with many favorable indications. The signs of over-expansion in business are few; the upward swing is not yet excessive and its present momentum gives promise of relatively good business through the first half of 1926. The outlook for business in the last half of 1926 seems to be largely dependent upon whether common sense will continue to prevail. If we keep our heads and do not try to expand too fast or too far, business should remain good for the entire year. On the other hand, if improvement is foolishly pushed into inflation, there may be a proportionate reaction. Therefore, prospects for late 1926 depend upon how much common sense we show in early 1926."

Standing on your dignity does not mean to trample it under foot.

North American
Fuel Burning
OIL **Equipment** GAS



No. 5B Individual Blower and Burner Unit on Vitreous Enamel Burning Oven

Standard in the Enameling Industry

Write for Details and List of Prominent Users

THE
NORTH AMERICAN MANUFACTURING CO.
8919 Frederick Ave., Cleveland, Ohio.

An almanac and a good imagination breed more disease than germs.

BOBLOY CAST POINT BARS, T-BARS, LOOP POINT BARS, CAST LOOPS, CALOY TRIANGLE BARS, IN VARIOUS SIZES, FLAT ROD, ROUND ROD, REMOVABLE POINTS, DOUBLE DECKING RACKS, HANGING RACKS—

ALL CARRIED IN STOCK FOR IMMEDIATE DELIVERY.

MAIL US YOUR ORDERS FOR POINTS AND BARS.

Buy from Bob

The Ferro Enamel Supply Co.
2100 Keith Building
Cleveland, Ohio

Many a man trying to be hospitable has landed in a hospital.

ASBESTOS GLOVES, PICKLE PILLS, MILLS, PYROMETERS, MUFFLES, BRICK, FORKS, OIL BURNING EQUIPMENT, MONEL METAL BASKETS, AND RACKS, HOISTS, SPRAY BOOTHS AND GUNS, DRYERS, BRUSHES, GRAINING EQUIPMENT, LIFT TRUCKS AND OXIDES.

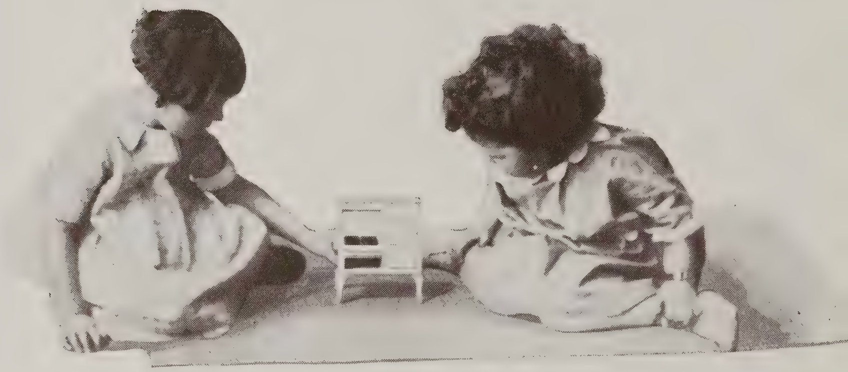
MAIL US YOUR ORDERS.

Buy from Bob

The Ferro Enamel Supply Co.
2100 Keith Building
Cleveland, Ohio

Running after "white foxes" is an attribute of the sly dogs.

Porcelain Enamel Digest



Miniature Stove Helps Sell Regular Models

The Geo. D. Roper Corporation, Rockford, Ill., manufacturers of gas and electric ranges, recently announced a miniature stove for children. This miniature, the Baby Roper, is true to life, being made of real castings, with removable grates and top burners, real hinged oven doors and finished in white enamel. It sells for one dollar and is distributed through the company's dealers. Thus it makes an easy unit sale leading up to the regular product.

It would mean a lot to the average dealer to have most of the little girls in his town playing with these ranges and for this reason the company is advertising the Baby Roper widely among its distributors.

In its national advertising the company runs either a line or a coupon mentioning the Baby Roper and sales have been made in this way. This winter, however, it is planned to illustrate and feature the Baby Roper in the company's national advertising.

You generally pay the doctor for a free lunch.

PATTERSON PEBBLE MILLS
at
The Detroit Vapor Stove Co.
Detroit, Michigan

The Patterson Foundry & Machine Co.

Richard L. Cawood, *President*

East Liverpool, Ohio

Our readers will be very sorry to hear of the death of Mr. Charles F. Bonnot, of the Bonnot Co., on December 28, 1925.

* * *

We were greatly delighted to hear of the recent marriage of Mr. H. B. Lindsay, who is sales manager for the Norton Company, of Worcester, Mass., manufacturers of "Alundum" muffle brick and tile.

* * *

The many friends of Mr. E. H. Weil, President of the Vitreous Enameling Company, Cleveland, will be pleased to know that he is the proud father of a fine new son, Tom Weil.

* * *

The A. F. Thompson Mfg. Company has been in the stove manufacturing game for several years and has felt the need of an enameling shop for sometime. The Saks Stamping Company were manufacturers of high grade enameled hospital ware and their factory was very modern.

* * *

The A. F. Thompson Mfg. Company who took over the plant January 2nd, has made all necessary changes to manufacture the best quality porcelain stoves. They will also be able to manufacture in very large quantities.

Mr. Brownfield, who did the enameling for Saks Stamping Company will remain with the Thompson Manufacturing Company.

We understand Jones Metal Products Company will do the enameling for the Saks Stamping Company.

We are pleased to learn that T. B. Fordham, President of the Foremen's Magazine, and Works Manager of Delco-Light Company, Dayton, recently became the father of a very fine son.

* * *

Our readers will be greatly interested to learn that Standard Gas Equipment Corporation has purchased the Rathbone-Sard Company of Aurora, Ill. This latter plant is to be known as the Acorn Division of the Standard Gas Corporation. Standard Gas Equipment Corp. is a combination of the Crane Company and Standard Gas Appliance Company of New York, and the Baltimore Gas Appliance Company of Baltimore.

* * *

Mr. H. L. Merrill, formerly of the Maine Mfg. Co., of Nashua, N. Hamp. is now associated with the Parker Refrigerator Company.

* * *

The Rehoboth Porcelain Enameling Co. is building a new furnace, 5' wide and 12' deep.

* * *

Mr. Will Mahoney, formerly with the Crane Company, Chattanooga, Tenn., is now in charge of the enameling department of the Wolf Mfg. Co., Chicago. His brother, Frank Mahoney is with the Humphryes Company, Mansfield, Ohio.

When people "put on side," they often take affront.

ACID *Pickling* and *Plating* Tanks are a specialty with us. These tanks are bolted with iron, Monel metal or B & M bronze rods; depending upon the service required.

Lead-lined Pickling and Pitch-lined Plating Tanks can be furnished in any size.

Write for Catalog—*A treatise on Wood Tanks*

The Hauser-Stander Tank Co.
CINCINNATI, OHIO

A stitch in time beats one in the side every time.

Mr. George Dougherty, formerly of The Prizer-Painter Company of Reading, Pennsylvania is now in charge of the enameling department of the Andes Range and Furnace Corporation at Geneva, N. Y.

* * *

FOR SALE—One set of 50 porcelain enamel Formulas, in all colors, for Sheet steel and Cast Iron in powder and liquid form, Eugene Wuerz, 1609 St. Paul Street, Baltimore, Md.

* * *

THE ASSEMBLY AND REPAIR OF GAS STOVES

Five hours per week was lost in a small shop of 25 men through borrowing tools. In addition there was the mental exasperation of piece-rate workers when his work was delayed to hunt for a tool. Now each worker has a complete kit of tools and a rack on which they are placed.

To eliminate almost 80 hours lost each week by the same workers in securing material a boy was engaged to bring supplies on a small truck. This reduced the time required for obtaining materials to less than a third of its original figure.

To the mind of the piece-worker these delays cause great annoyance and lead to irritation, resentment, worry and, anxiety. In many cases the worker and management are blind to these causes which can soon be discovered, however, by the "fresh eyes" of an outsider.

Fatigue was caused by the postures necessary for the men to assume in repairing the stoves. An adjustable, revolving table was devised to relieve this source of discomfort and fatigue.—*G. H. Miles and A. B. B. Eyre in The Journal of the National Institute of Industrial Psychology, October, 1925.*

* * *

The Bruce Products Corporation have purchased a factory at Howell, Michigan, where they will manufacture their entire line of BRUKO Metal Finishing Materials.

The factory is of mill steel, concrete and brick construction with fifty thousand square feet of floor space. The plant is equipped with a battery of three high pressure boilers and power plant for producing light and power.

Incorporated in 1920, manufacturing of Metal Cleaners was begun in small quarters in Detroit. Later larger quarters were necessary and in 1923 the plant was transferred to its present location, where in addition to BRUKO Metal Cleaners they began the manufacture of buffs and polishing wheels.

Additional equipment has been added to their Buff Department which will triple its capacity of buffs and polishing Wheels. In addition they are manufacturing coloring and buffing compositions. Large glass lined tanks of 100,000 pounds capacity will be used to store zinc and ammonium chloride soldering and tinning fluxes.

We certainly congratulate Mr. Bruce and his organization on their success which is justly due them.

Round dollars soon roll toward the man who's on the square.

A WORD OF WARNING ON SANDBLAST ABRASIVES

IT is this: Don't be deceived by *anybody's* claim that his screened white sand is "just the same as"—or "just as good as"—*FLINT SHOT.*

For FLINT SHOT is not *Sand* but a *Manufactured* Product

It consists of uniformly sized pearl-like grains of *pure flint*, recovered from St. Peter's rock, by highly perfected modern processes.

Naturally, it cannot be sold at the price of sand, but our customers find it the *cheapest of all abrasives*, in the long run, because:

1. It requires *less air* per unit of work done—and *air* is the largest item of sandblasting costs, exceeding the delivered cost of *any* abrasive.
2. It *lasts much longer.*
3. It does *cleaner work.*
4. It gives the metal *the ideal finish* for holding the enamel.

Accredited Jobbers, in various industrial centers carry stocks of FLINT SHOT. We will supply to carload buyers, direct, or thru nearest jobber, as many 150 lb. bags as are required for a working test---------- **FREE** **Freight Prepaid**

Send for our new book, "SANDBLASTING UP-TO-DATE."

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

Family skeletons seldom worry families with fat bank rolls.

Great improvements are being made by the dry process enamel plants in various parts of the country. Kohler Co. is reported as having plans for a large new addition, Crane Company of Chattanooga, are making very extensive improvements, and Wolff of Chicago and Standard Sanitary of California are planning large new additions.

* * *

"Historians may some day point out that the greatness of America was based upon two institutions—the convenient bathroom and the sanitary kitchen. Certain it is that the manufacture and sale of knicknacks designed to increase the comfort and convenience of these two great departments of the American home furnishes employment to many thousands of people, and the persistent effort being made to sell these things in Europe will no doubt some day break down the formidable barriers which tradition and custom have erected there."

* * *

R. A. Nelson, formerly with The Ferro Enamel Supply Company, Cleveland, has accepted a position with the Andes Range & Furnace Co., Geneva, N. Y.

* * *

"Health Nuggets," is the title of an interesting and valuable little book written by O. E. McFadon, D. O., father of E. O. McFadon, of the Karr Range Company. This book is published by the R. G. Badger Publishing Co., Boston, Mass. Price $1.00.

* * *

Ed Colquhoun, of Wincroft Stove Company, sent us the booklet containing "Fisherman's Philosophy" which we are printing this month. We hope other subscribers will send in articles which will be interesting to the enameling, stove or other subscribers of *The Enamelist*.

* * *

Mr. John Lodwick has been appointed Sales Manager of the Curtis Pneumatic Machinery Company, St. Louis, and Mr. L. C. Blake Advertising and Sales Promotion Manager.

* * *

From "Raedeations" we learn that THERE NEVER WAS ANYTHING MADE BUT WHAT SOMEONE COULD MAKE IT WORSE AND SELL IT FOR MORE.

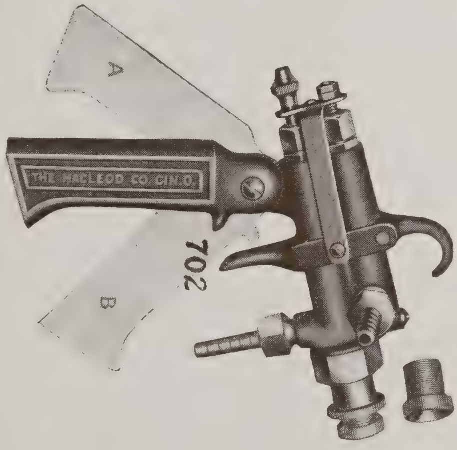
* * *

We understand the Chattanooga Stamping & Enameling Company, Chattanooga, Tenn., M. Patten, President, has increased its capital stock from $200,000 to $300,000. They have also increased the capacity of their enameling department.

Like autos, the tired business man often blows out and goes flat.

Sandblast Equipment

TABLES,
BARRELS,
ROOMS,
CABINETS,
SPECIAL OUTFITS,
DUST COLLECTING
SYSTEMS



Enamel Sprayers

Made to suit all solutions
and mixtures.

SPRAY BOOTHS,
AIR COMPRESSORS
and all equipment.

The **MACLEOD CO.**
Station B
Cincinnati, Ohio

It takes a smart girl graduate to translate the cook book.

FISHERMAN'S PHILOSOPHY

We recently ran onto a strange bit of philosophy while on a little fishing expedition with Charley Jeffrey, Vice President of the Scranton Stove Works. A few years ago he and another Izaak Walton bought a small lake, that was going begging up in Wayne County, Pa. Jeffrey and his partner keep this lake for a purpose. When they get all fagged out with affairs of business, and want a mental holiday, they go fishing. They always get the mental holiday, and they also always get some fish. We can testify to that. Neither Jeffrey nor his partner ever go fishing alone. Jeffrey is always besieged by folks who want to get a mess of fish, and when one of these friends does not go along with him, Mrs. Jeffrey can always be depended on to occupy one end of the boat. She is the best fisherman's wife we know of. She loves the sport and can do everything, even to bait casting without a backlash.

Charley Jeffrey has the right idea. He is always planning a fishing trip for tomorrow—or next Tuesday, and what man cannot be happy with such a holiday just ahead. After all, half the fun of going fishing is "getting ready."

We asked Jeffrey what line of business he would engage in if he was a young man and had his life to live over again. He was almost pathetic when he said, "I think I would go in the Undertaking business—because when I had a customer six feet under the ground, he wouldn't come back and say It won't bake on the bottom."

And so it seems that the stove business has its griefs and worries the same as every other business. We had begun to think the printing business was the only business that was abused and friendless.

The Scranton Stove Works, incidentally, are enjoying their sixty-third year of success, and for more than forty years Mr. Jeffrey has been learning from Dockash owners why Dockash stoves are all wrong. "The main trouble with the stove business is"—Mr. Jeffrey says, "we don't build chimneys, nor do we build brains with which to operate our stoves."—*From Raedeations,*

Pub. by the Raeder Company

* * *

We regret to hear of the death of R. E. Bebb, President and General Manager of The Canton Stamping & Enameling Co. Mr. Bebb was also the founder of the Central Steel Co., and was formerly president of the Columbus Vehicle Company and an officer of the Broeburn Steel Co., Chicago.

* * *

At a recent meeting of St. Louis exporters, Prof. Bates of Washington University declared that the only chance for St. Louis to become a great export center depended on the development of the Mississippi River facilities.

The meeting was presided over by W. B. McSorley, of the Wrought Iron Range Co. In introducing the speaker, McSorley asserted that St. Louis has the third largest export organization in this country.

* * *

We have just finished reading the first copy of "Industrial Psychology," which we find very interesting. This magazine is being published by Industrial Psychology Publishing Co., Hamilton, N. Y.

Money that talks too loud is likely to be somebody else's easy money.

IF you want to use a substitute for tin oxide, use the best and cheapest substitute.

M and T

SODIUM ANTIMONATE

It is technically pure and contains no kaolin or other fillers. Therefore, it gives your enamels good working properties and fine color and gloss.

In wet coat enamels for steel and iron, one half the tin oxide can be replaced by using 1½ pounds of M and T Sodium Antimonate in place of one pound of tin oxide.

Write for details and prices.

Metal & Thermit Corporation

Ceramic Department
HOMER F. STALEY, Mgr.

120 Broadway
NEW YORK

The Eriez Stove & Mfg. Co., Erie, Pa., are in the market for a man to take charge of a plant in Canada for them. A man with sales ability preferred.

* * *

The many friends of the Grand Rapids Refrigerator Company, long famous for its enameling chief, John Bardusch, will be interested in the recent news of that company. It is a member of a powerful combination just formed with the Kelvinator Corporation and the Nizer Corporation. The new combination will have a new capitalization of $10,000,000. Stocks of Kelvinator and Nizer will be exchanged on a share for share basis into the newly organized corporation and a cash consideration of $6,000,000 will be paid for Grand Rapids Refrigeration Company. The announcement of this combination boosted all the stocks involved. The new stock will be listed on the curb exchange in the near future.

* * *

Services for Robert R. Theobald, Vice-President of the Toledo Scale Company were held in the home of his mother, Mrs. Henry Theobald. The Rev. E. F. Talmadge, rector of Trinity Church officiated. Honorary pallbearers were Rathbun Fuller, Fredrick L. Geddes, C. L. Reynolds, O. C. Reeves, W. A. Zorg, and Lenox S. Rose.

* * *

Believing that *The Enamelist* should guard the health as well as the wealth of the industry, we want to suggest a good old family remedy for colds in the head.

Buy from any good druggist a bottle of CMA (composed of camphor menthol and albiline) and use with glass dropper two or three times a day until cured.

You should drop the medicine (good quantity) into your nose, hold your head back and let nature take its course. No charge for this idea.

* * *

There are still a few enamelers who don't take much stock in plenty of insulation. Here's a story that will interest them. It may also suggest a good idea to some of our warm air heating friends.

Our furnace at home kept the basement very warm but didn't produce much heat upstairs. We burn gas so expense also had to be considered.

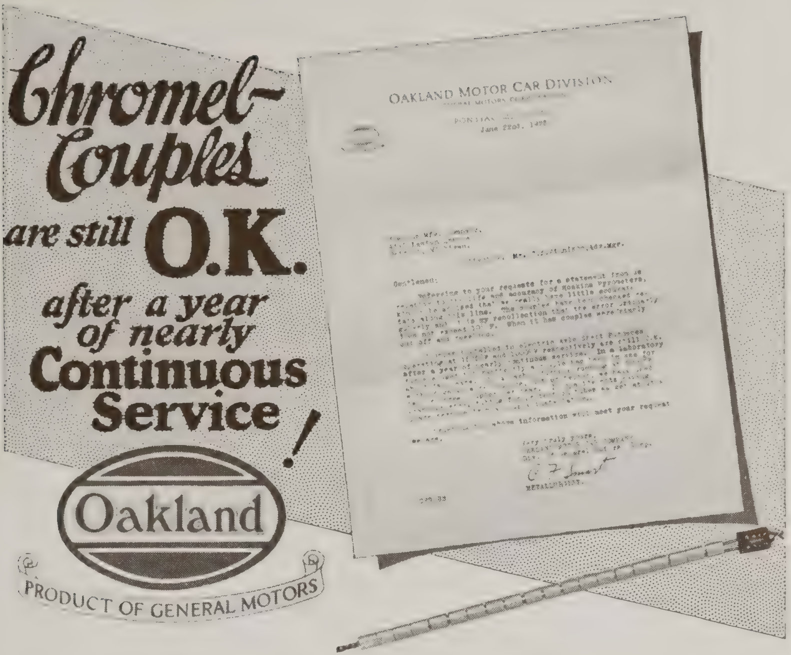
The Keasbey & Mattison Company who supply so many asbestos gloves to the enamel trade, also make a great variety of asbestos products. They have a corrugated asbestos sheet which they applied very neatly to our furnace and pipes with amazing results. The upstairs is now cozy but the basement is too cool to dry clothes. Motto, "Use plenty of insulation, wherever possible."

* * *

SALT FOR FATIGUE

Some years ago a German physician reported that workers in the mines could be relieved from fatigue by small doses of sodium phosphate. Now Professor Neville Moss of the University of Birmingham claims that miners become exhausted less easily when working in a temperature of about 100 F. when drinking water contains even one-fifth of one per cent of common salt. The British physiologist, J. B. S. Haldane, explains this as due to the fact that the salt added to the drinking water makes up for that taken from the body by perspiration. Scientists are inclined to regard the matter as empirical and await controlled experiments.—*Hygeia.*

It takes a real pessimist to deny good things said about himself.


Chromel-Couples are still O.K. after a year of nearly Continuous Service!
Oakland
PRODUCT OF GENERAL MOTORS
OAKLAND MOTOR CAR DIVISION

Not only does The Oakland Motor Car Company, say good things about Chromel thermocouples, but so also do Chervolet and Cadillac and the entire General Motors Corporation.

The same properties of Chromel couples that have made them the most widely used couple in the steel treating field, make them of equal advantage in the enameling industry. Their principal characteristic is that of remaining accurate throughout their long life at all temperatures up to 2000°F.

They are said, by all users, to be the most durable and accurate of all base metal thermocouples. Your pyrometer manufacturer will calibrate your meters to fit them. Or when you need new equipment, buy Hoskins Pyrometers equipped with CHROMEL couples.

Hoskins Mfg., Co. 4439 Lawton Ave. **Detroit**

New York Boston Cleveland Chicago San Francisco

Hoskins Pyrometers

Originators and Manufacturers of **Chromel** The most widely used Thermo Couple Alloy

Wedgewood Ranges, famous for many years on the Pacific Coast will be manufactured in Los Angeles in the future as well as at the home plant at Newark, California.

Mr. C. C. Jelleff, formerly of the Favorite Stove Company but for some years in charge of manufacturing for Wedgewood, is installing the equipment at Los Angeles.

They will be equipped to make 100 gas ranges a day. The complete sheet metal department will include presses for forming, blanking, punching, notching, etc. They will have power shears and brakes. The assembly department will be equipped with individual motor driven grinders, push button control and small tools.

* * *

The new plant will have nickel plating department, japan ovens, etc., but castings and enameled parts will be shipped from Newark. The plant should be in operation early in January.

* * *

We understand that the Lindeman & Hoverson Co., Milwaukee, are making additions to their plant, and that the Evansville Enameling Co., Evansville, Ind., are also adding to their shop.

* * *

Vitrified Iron Products Co., Harry Warman, President, are adding a new Alundum enameling furnace, and other equipment. Furnace installation is being made by Ferro Enamel Supply Co.

* * *

Mr. C. N. Turner, formerly general sales manager of the National Enameling & Stamping Co., Milwaukee, Wis., is now Vice-president and general manager of that company.

* * *

Mr. Mahlon Manson is recovering nicely from a very severe illness, and is expecting to be able to attend the Ceramic Convention in Atlanta.

* * *

Many of our readers who are going to the Atlanta Convention will be interested in seeing the historical sights in and around Chattanooga, Tenn. Mr. A. V. Knowles, of The Titanium Alloy Mfg. Co., and local chairman of the American Ceramic Soc., took this matter up with the railroad, inasmuch as normally the only stop overs allowed would be on a tourist ticket. He reports that stop over at Chattanooga will be permitted, on your regular round-trip ticket, providing you will reach your original starting point by February 19th. The final date of the Convention is the 13th ,so this allows for enough time for an interesting visit to that city.

Winning a girl's hand doesn't necessarily include the heart.

TAM

OPAX

This Hits Your Pocket Nerve

1. Actual cost figures in 1925 show that the average three-furnace enameling plant can save at least

A Thousand Dollars a Month

by using *OPAX*.

2. Had *Opax* been discovered first, there would be no other opacifier on the market.

3. *Opax* is not a mixture, not a substitute, not a secret compound.

4. *Opax* is chemically definite, uniform, a domestic product, always available at a known price, and has every commercial and technical foundation for being

The Ultimate Opacifier

5. Overlooked or delayed profits pay no dividends, and the New Year gives you the chance to start right for bigger profit figures in your next annual financial statement.

The Titanium Alloy Manufacturing Company
Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT
R. D. LANDRUM, *General Manager*
6007 Euclid Avenue CLEVELAND, OHIO

Bits of Frit

Terence—" 'Tis a fine lad ye have here. A magnificent head and noble features. Could ye lend me a couple of dollars?"

Pat—"I could not. 'Tis me wife's child by her first husband."

—*London Telegraph.*

* * *

1926 MODEL

"I want to marry your daughter."

"But can you divorce her in the manner to which she has been accustomed to?"

* * *

ALIKE

Rastus—"Ah done ear yo' stayed in de haunted house last night. What happened?"

Sambo—"'Bout two o'clock Ah woke up an' a ghost come frew de side wall jes' as if de wall wasn't dere."

Rastus—"An' what did yo' do?"

Sambo—"Boy, Ah went frew de other side wall de same way."

* * *

Rastus (watching the construction of a new gasoline station)—"Boy white folks is sure intelligent."

Snowball—"How come you 'rive at sech reduction, Rastus?"

Rastus—"Dawgone, dey knows jest what lots to dig t' git gasoline."

Nobody ever goes on a strike to raise the wages of sin.

Why so many enamelers prefer ARMCO Ingot Iron

YEARS of costly experience in testing all kinds of base metal has convinced many leading manufacturers of enameled ware, that there is one sheet that can always be relied upon to do the job well—and do it with the least amount of trouble and expense. And that is ARMCO Ingot Iron.

They have found this iron virtually free from gases, dense and uniform with a toothlike surface that grips and holds enamel.

No changing of process is necessary to meet variations in the base metal, because ARMCO Ingot Iron never varies.

ARMCO has made a special study of enameling requirements. A special process plus careful inspection by trained workmen assures the highest possible percentage of perfect sheets.

ARMCO

Always the same — Always ideal for enameling.

THE AMERICAN ROLLING MILL COMPANY

Middletown, Ohio

Export: The ARMCO International Corp.

Cable Address: ARMCO, Middletown.

ARMCO INGOT IRON

TRADE MARK

HIS TECHNIQUE

A young girl was telling that her brother, assistant clerk in a man's hat shop, would have to wait some little time before he could be promoted to full salesman. Asked why, she answered—"The store can sell old hats if the customer leaves them, and my brother is learning to *sneer just right* when he asks a man if he wants to take his old hat home!"—*The Loop*.

* * *

OPTIMIST

I love to hear the alarm clock ring. I can't understand the people who curse it as an interrupter of sweet repose. To me it seems the symbol of existence itself. It is the sign that the great city has awakened from its slumber, that a new day is beginning that the streets and buildings will soon be filled with surging, progressing life. Faithful servant! I love to hear the alarm clock ring.

I am a night watchman.—*Judge*.

* * *

ALL TOLD

Motorist—"What's the population of this village?"

Native—"We have four hundred and seventy-eight regular inhabitants and three boys in the Navy."

* * *

Mrs. O'Brien—"Have you any ancestors, Mrs. Kelly?"

Mrs. Kelly—"And phawt's ancestors, Mrs. O'Brien?"

"Why, people you've sprung from."

"Listen to me, Mrs. O'Brien. I come from the stock of Donoghues that sprung from nobody—they spring at them."

When the dam breaks, remember there are other good words left.

SIL-O-CEL
HEAT INSULATION

The "Heatrola"
An Estate Stove Co. Product

Seven doors like this one are insulated with Sil-O-Cel C-3 Concrete in the Estate Stove Co. Plant

Furnace doors made of Sil-O-Cel C-3 Insulating Concrete are semi-refractory as well as heat-tight. For ordinary enameling temperatures this insulating material requires no facing. It is light in weight, and easy to install.

Write for Bulletin 15-T

The applications and uses of Sil-O-Cel C-3 are described in Celite Bulletin 15-T. Write the office nearest you for a copy. A sample, also, will be sent you if you request it.

CELITE PRODUCTS COMPANY

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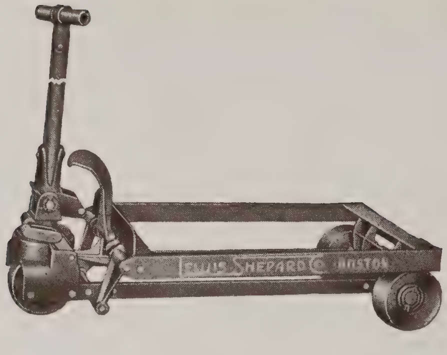
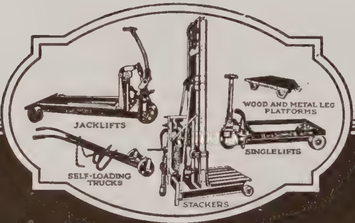


MR. ENAMELER!

Do you want a lift truck that lifts gently, that rides and steers easily, one that "stands the gaff," and one that doesn't cost a lot?

Lewis-Shepard Singlelift trucks are especially built for use in enamel shops, and are being used by every thinking fellow in the industry.

Write for our interesting new catalog.



Lewis-Shepard
BOSTON

ASBESTOS PRODUCTS

for Enameling and Allied Industries

Asbestos Fibre
Asbestos Yarn
Asbestos Cord
Asbestos Thread
Asbestos Cloth
Asbestos Clothing
- Coats
- Pants
- Aprons
- Mittens
- Gloves
- Patches

This is the famous reinforced mitt which is being used by the biggest enameling companies in the business. In a comparative test it lasted 100 hours longer than the next best mitt. Let us send you a trial pair.
Also furnished in reversible style, re-inforced both sides.

High Temperature Insulation for Hurricane Dryer and other makes.

High Temperature Blocks also 85% Magnesia Blocks.

Write for descriptive list and prices of full line.

Keasbey & Mattison Company

AMBLER, PA.

Cleveland Office
1160 W. 11th St.

The Largest Plant of its Kind in the World

If it's made of ASBESTOS we've got it!

Get The Facts Now!

January 1926

On Drying Enameled Ware By the "HURRICANE" Continuous Method

It requires only a fraction of the labor. You can have the statement of a user about this!

The material in process is cut down. Again we have interesting facts.

And there is uniformity and control not possible before.

If you are drying Enameled Cast Iron, Stove Parts, Table Tops, etc., we invite you to investigate now. There is no obligation.

Address your letter to

The PHILADELPHIA DRYING MACHINE CO.

Stokley St. above Westmoreland, Philadelphia, Pa.

Canadian Agents
Whitehead, Emmans, Ltd.
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HURRICANE
Ideal Drying Every Day

New England Agency:
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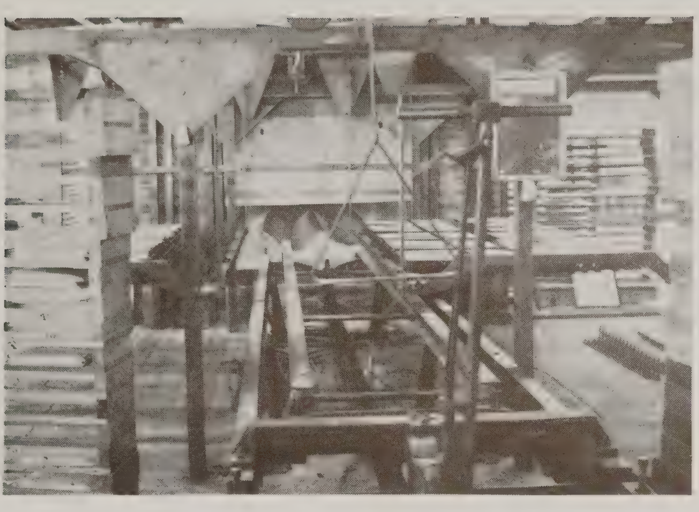


Why Enamelers Like Alundum

ALUNDUM REFRACTORIES insure quick, even temperatures and even production. They save fuel, produce better ware and have long life.

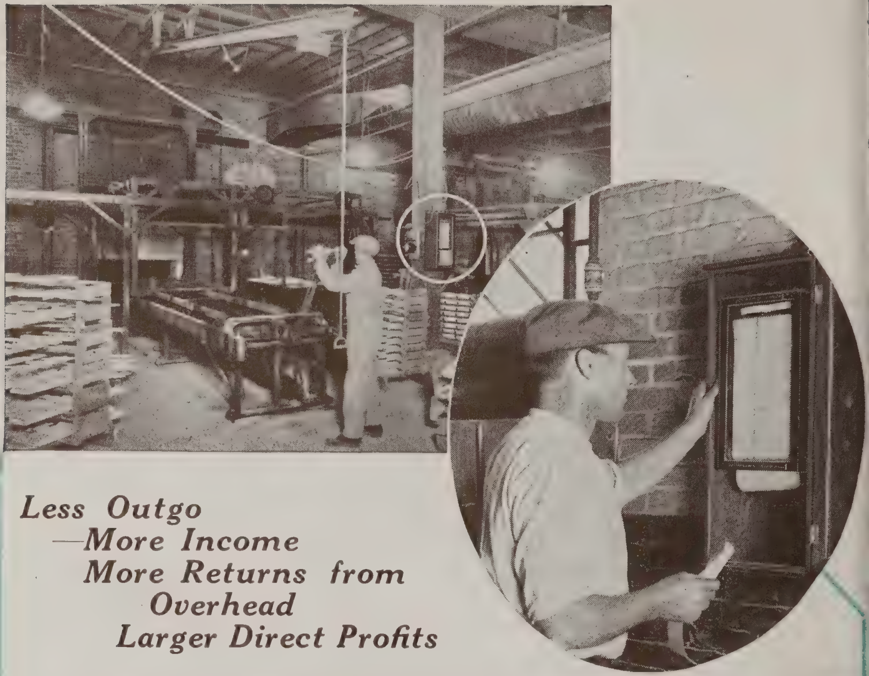
"Alundum" is electrically fused alumina produced in an electric arc furnace. Alundum muffle plates are mechanically strong, chemically inert, have high conductivity. For these reasons they are ideally suited for the construction of enameling furnaces.

Repeat orders for Alundum Muffles like the one in the furnace shown above are the best evidence of satisfactory performance.

NORTON COMPANY **WORCESTER, MASS.**

R-253A

TRADE NORTON MARK



Less Outgo
—More Income
More Returns from Overhead
Larger Direct Profits

Closer and more dependable control of temperature through equipment of furnaces with BROWN PYROMETERS is a powerful competitive advantage because:

1. By reducing spoilage and "seconds" it saves material fuel and labor—reducing outgo and increasing income.
2. By reducing spoilage and "seconds" it lessens delayed deliveries, increases good will—builds business.
3. By reducing spoilage and "seconds" it increases returns from overhead by keeping kiln investment profitably employed.
4. By reducing spoilage and "seconds" it increases direct profits by increasing output of ware salable at top prices.

Address: The Brown Instrument Company, 4510 Wayne Avenue, Philadelphia, Pa., or one of our District Offices in New York, Boston, Pittsburgh, Detroit, Cleveland, Chicago, Indianapolis, Birmingham, Houston, Tulsa, St. Louis, Denver, Salt Lake City, San Francisco, Los Angeles or Montreal.

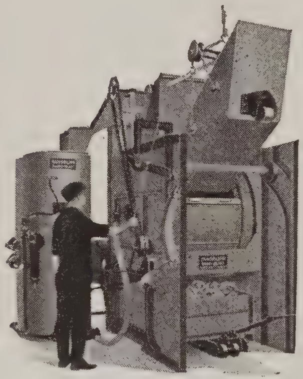
Brown Pyrometers
Most used in the world

The Enamelist

A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY

MARCH, NINETEEN-HUNDRED-TWENTY-SIX

Wouldn't You Welcome It?



WOULDN'T your plant welcome increased production at lower cost—

Greater Sand Blasting Capacity with No Increase in Air, Power or Breakage?

Barrel Cleaning is the cheapest method of Sand-Blasting, and direct-pressure with greater abrasive intensity means quicker cleaning.

In this new Pangborn Direct-Pressure type "GH-1" Barrel, with double mixing chambers for individual nozzle feed. Economy and Production are combined as in no other type.

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The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

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A Friend of Mine

The Editor is particularly proud of his many interesting friends and one of the most interesting is Guy Cowan. He combines the spirit of a true artist with the common sense of a practical manufacturer. He is a graduate of Alfred University, has a splendid grasp of the fundamentals of ceramics and at the same time has that creative spirit which produces real art.

He has built up a national reputation and business for a pottery which is sold on artistic merit. We illustrate some of his

Telephone rates are never raised—the "schedules are revised."

most interesting pieces. The methods used in making this pottery will interest all enamelers. The base is a mixture of kaolin and ball-clays, quartz, feldspar and water. A master mould is made of a special type of plaster-paris from Oklahoma.

From this mold is made the working mold which portends the finished piece of pottery and into which the liquid clay is poured and left to "set."

When the mold has had time to absorb some of the moisture of the clay, it is emptied and the thin shell of clay which remains becomes the pottery. The first "firing" takes about 50 hours. Now for the glaze—each piece is dropped into the bath of lead, feldspar, boric acid and other chemicals and carried to the first coloring. A second firing—the gloss—gives the pottery its permanent color.

R. G. Cowan demonstrates the old, unreliable process of shaping clay by hand.

* * *

An interesting item appeared recently in "Ceramic Industry," telling of permanent safety traffic lines which have been established in the congested streets of London, England. These lines consist of porcelain enameled spots, wedged into the pavement.

* * *

Mr. G. R. LeSavage, formerly of the Solar-Sturgis Co., Chicago, is now Vice-President and General Manager of the Republic Metalware Company of Buffalo.

Boys will be boys, and the girls will, too, in a few years.

Pyrometers For Vitreous Enameling

By L. S. Weimer

Malleable Iron Range Company

THERE are so many important operations in producing good enameled parts, that it would be difficult to say which really is the most important. Correct burning is such a prominent factor that it is especially worthy of attention, to obtain good ware.

Assuming correct furnace design and construction, the question is, how the proper burning may be accomplished. There are several methods employed at the present time. The first, in which the burning of the enamel is dependent entirely upon the skill of the person in charge of the furnace, inasmuch as he depends upon the color of the furnace for the temperature and watches his ware for the desired results.

Many burners become very proficient and are able to ascertain the correct burning temperature of the oven within a few degrees, and the work of such men is usually beyond reproach; but this method also has that personal element, which is subjected to different conditions, for instance, a furnace will not look as hot on a bright day as on a dark day; also results will vary due to mental and physical condition of the burner. It, therefore seems obvious that a method largely eliminating these variable conditions is a solution to this vital problem. Applied science has come to our rescue and given to this industry the Pyrometer.

A very practical Pyrometer installation consists of an indicating and a recording instrument, each provided with a multiple switch, so that any desired number of thermo-couples may be attached. The reading is secured by turning the switch to the desired couple.

The Pyrometer should be permanently mounted at a place conveniently located for the burner, as free as possible from dirt, vibration and excessive heat. By using compensated wire, automatic cold junction adjustment, these instruments may be installed at different places, without any appreciable error; for instance, it is sometimes desirable to place the indicating instrument in a convenient place for the burner, while the recording

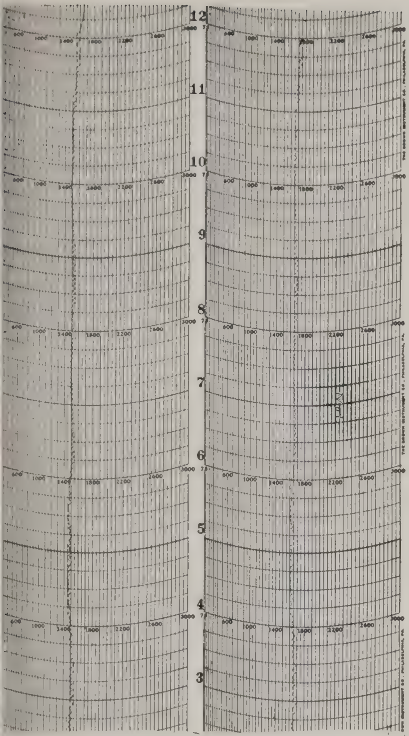
Time cures everything, even winter and summer.

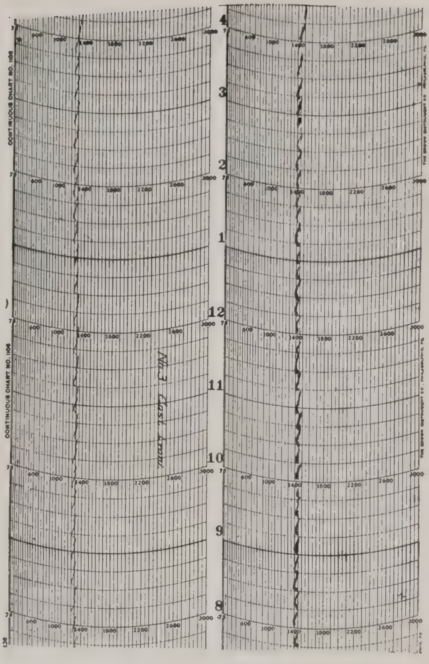
instrument is run to the superintendent's office. By installing the two instruments together, as shown by the cut, it gives the burner an opportunity to study the recording chart, so that he is more useable to control his temperature.

Recording and Indicating Instruments appear at right.

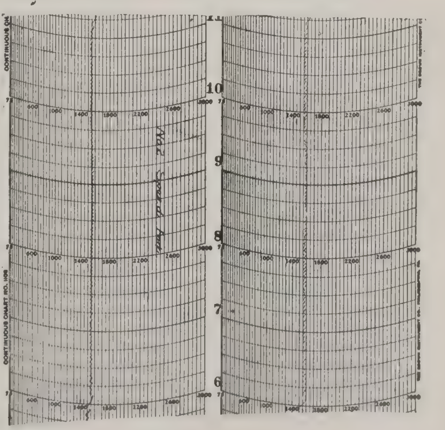
The temperature charts shown were taken from a duplex recorder. Noble metal thermo couples were used, with the tip of the fire clay protecting tube cut so as to permit the porcelain tube to project through the clay tube one inch. The tubes were placed through the back wall, slightly above the burning plane of a 48" x 120" fire-brick muffle oil fired furnace. This makes a very sensitive, yet durable installation, as the rhodium platinum couples used have been in continuous service for over three years. This chart shows uniform temperature maintained, also regular burning time. For each time a new load is put in the furnace is shown by a depression on the chart. Therefore, a recording chart not only shows the temperature at which the ware was fired, but also the burning interval.

No matter what happens, some one always knew it would.





Charts
taken from
Recording Pyrometer



No. 1 shows burning record when Bonnot overhead fork was hand load.

No. 2 shows same when fork was used with speed loaders. (Notice the increase in production by this method for loads were increased from 15 to 22 heats per hour by using the unloader, as clearly shown by comparing No. 1 and No. 2 charts.)

No. 3 shows same furnace while burning cast iron.

It is gratifying to come into the enameling room in the morning to find the recording chart equally uniform throughout the night, for it shows at a glance that the ware was properly burnt with maximum production.

Of course, pyrometers to be of real service must be accurate, properly installed and properly maintained. The manufacturer will gladly give correct installation advice, and in many cases supervise the installation. So, by buying good thermo-couples, well placed, with good protecting tubes, very accurate results are obtained.

The noble metal couples seem to be best adapted for enameling temperatures, although either will give very satisfactory results. The base metal couples cost much less, but are not as sensitive, and are shorter lived. In either case it is advisable to check the couples and instruments at regular intervals. This may be done by comparing with standard couples and instruments, by optical pyrometers or by calling in a service man from the factory, but a very simple and convenient method is to have a supply of pyrometer cones. By placing a cone in the oven with a definite melting or bending temperature, according to the type of cone used, if this cone functions at the corresponding pyrometer temperature, one may be assured that the instrument is correct.

It may be seen by studying the charts how uniform the temperature can be maintained with the heats burnt at regular intervals, and approaches an ideal condition for this operation.

Therefore, much trouble and grief may be eliminated by installing pyrometers, for it not only decreases the amount of defective ware, but decreases fuel consumption by maintaining uniform temperatures, and increases production by keeping correct burning heat and by keeping an absolute record on the furnace.

Everything dear is a woman's fancy.

Mixing and Smelting Department

By F. M. Burt

SEVERAL years ago the writer was in charge of enameling in a small factory using two furnaces to capacity,—producing kitchenware and hospitalware. All of the smelting was done in a double, natural gas-fired reverberatory type smelter, using about 400 lbs. of raw chemicals in each batch.

The chemicals were hoisted, as they came in to the second floor, by a small elevator run off a line shaft and there stored.

In mixing they were dumped on the floor in proper quantities and thoroughly stirred with a hoe.

Actual experience shows that this method of mixing is easier and more convenient than the use of a hoe or shovel and a box or bin.

Each chemical was designated by its own number of two numerals and the formula was written out with the weight coming first followed by the chemical number. As,—No. 40 was Borax, therefore 6040 meant 60 lbs. of Borax.

The mixer, a capable careful man, had the formula except for three of four chemicals, which were used rather sparingly. These the writer mixed in 100 lbs. or 200 lb. batches in their proper proportion and had the mixer add the proper amount of the resultant combination to the balance of the batch. So while retaining the formula in all secrecy there was no necessity of following up the mixing in all detail.

After being thoroughly mixed the batch went into the smelter by way of a hole in the floor and a wooden chute which was followed by a steel chute hinged at the top that it might be swung up and out of the way.

After the frit was quenched in the cold water tank and the water drained off it was shoveled into bins of 1,000 lbs. capacity with hinged fronts allowing easy access as the enamel was lowered. These bins were mounted on runners and handled with lifting trucks and were stored close to the mills.

This arrangement was approximately as convenient and efficient as any seen in many dozens of factories visited by the writer. Compare this with the following arrangement.

This is meant to be operated principally by one man per shift and to supply for example a six to nine furnace plant producing kitchenware and using thirty to forty dippers or any plant of lesser capacity.

Just inside the unloading platform door is an elevator to lift incoming chemicals to the mixing or second floor.

Two methods can be used on the more bulky chemicals. With the first we hoist the chemicals and place in convenient bins or in the permanent containers close to the hopper of the cylinder mixer.

The other method calls for large steel hoppers built in cylinder form and large enough to contain over a carload. An automatic bucket conveyor unloader brings the chemicals from the car to the hoppers.

With the first method the chemicals are scooped or shoveled from bin to a convenient receptacle on the scales, thence to the mixer.

With the second we use a hopper suspended from scales mounted on a track running underneath the cylinder hoppers. The proper amount of chemical is discharged into the hopper through a chute in the bottom of the big container. By the time the hopper arrives at the end of the track, near the mixer, all of the bulky chemicals are properly assembled.

After thorough mixing in the power mixer the proper chute is attached to the discharge end and the batch slides into the smelter on the level below.

A card should be kept showing enamel number, batch weight, time of charging, smelter temperature and time of discharging. The batch should be stirred at regular intervals unless a revolving smelter is used, which is the writer's favorite by far.

Two streams of water should hit the molton enamel as it leaves the smelter leaving it in a soft fluffy mass after thoroughly quenched.

From the metal water tank, after the water is drained off, the enamel is dumped into 1,000 lb. capacity bins mounted on runners and calibrated for dry enamels for inventory purposes. These bins are elevated to the second level and stored above the mills. These are loaded by chutes via convenient scales with

Some family trees must have been cocoanuts.

the water being measured through a water meter attachment.

The mills can be unloaded by compressed air directly into large steel cylinder storage tanks equipped with mechanical agitators or by the valve door arrangement into smaller wheeled containers. The large storage tank is equipped with a valve at the bottom for discharge purposes.

With this system one man can mix his enamels, run a double smelter of 1,000 lb. capacity per side, load and unload his mills, but would probably not have time to deliver enamel to dippers and sprayers. During his shift he would produce a maximum of 800 lbs. of frit per hour and keep several mills operating with possibly a little assistance from the man or boy who delivers enamel to the dippers.

This arrangement has been worked out in detail and is not overly expensive. Variations which are easily arrived at are necessary for adaptation to any individual factory.

* * *

In a conversation with the president of one of our oldest and largest kitchenware plants the question came up of appendicitis caused by enamelware chips. He stated that the origin of this propaganda dated back to a speech or article by a prominent New York professional man who spoke as an authority.

When he was pinned down for proof the statement was attributed to a Philadelphia doctor who subsequently denied it. It is thought, however, that he did make the statement rather unthoughtfully and with no justification.

And that is the story of enamel-caused appendicitis.

* * *

Do you remember how you used to want to be snowed in so that you couldn't get out? This is what happened over in Boston the other week. One of our friends writes us: "My plans to go to Taunton this week to visit the Glenwood Range Company were upset by the heavy snow storm which blocked traffic in all New England. You may have noticed reports in your local newspapers of the fact that the State House in Boston was opened to the stragglers who were unable to leave the city. Three street cars near Attleboro are still snow-bound, and the attached clipping tells about one of the motormen, who was imprisoned for 3 days in his car."

* * *

Dr. W. Schultz, Enamel Expert at the National Enameling & Stamping Company, Granite City, Ill., sailed recently for a trip to Germany.

Speeding is often very arresting.

Enameling Business Increasing

OUR survey of enameling conditions for the first part of 1926 indicates that January started rather slowly, but that business in February showed a decided increase. In January 65% of the enameling furnaces were busy, while in February 72% of the furnaces were working regularly. This compares with an average of 80% for the last three months of 1925, but undoubtedly many furnaces were shut down for repairs and for inventory.

Some of the comments on the cards returned are quite interesting. They are as follows:

"Expect to run night shift."

"Business good."

"Running practically full capacity."

"New furnace under construction."

"Outlook great."

"Business fair."

"Business is very promising."

"The Enamelist is one of the best trade papers we receive".

"Prospects for future—good."

"Furnaces operating twenty-four hours daily."

"Running full."

"Business increasing."

"Down for repairs."

"Closed for repairs during January."

"Business picking up."

"Business in New England good, future bright."

"Fifty per cent gain over January 1925."

We hope to show in the next Enamelist that furnaces are running 85 to 90% of capacity.

No one ever got ahead by holding someone else back.

The above picture will be interesting to most of the subscribers to the ENAMELIST, which shows practically all of the members of the Ferro organization. Bottom row, left to right are, Brooks, Mavor, Williams, Ebright, Cushman, Bob Weaver, J. C. Weaver; while in the top row, reading left to right, are Hart, Hale, Rumer, Kreager, Tuthill, McFadon, Markert, Henry and Luebbert.

This group have worked hard to increase the quantity and the quality of enameled parts produced in this country. Eight of the men have been foremen or superintendents of good enameling plants, so they know the practical end of the business thoroughly. Four are graduates of ceramic schools, three have graduated in chemical engineering, so that all in all the organization is well balanced, in having both practical and technical men.

The Ferro Research Department has made great progress in developing new and better enamels, and will announce in the very near future some developments which will be of great interest to the entire enameling industry.

It's easier to get speakers for a meeting than it is to get an audience.

Atlanta Ceramic Convention

MUCH to the surprise of many of the leaders in the Enameling group, there was a large crowd of men interested in enameling who attended the Atlanta Convention. It was a great tribute to the work being done by the Enameling Division to note the number of men who took the time to make the long trip to Atlanta to attend the meeting.

Monday afternoon was spent by many of the men at Stone Mountain Memorial, just outside of Atlanta. Stone Mountain is the largest solid body of exposed granite in the world. It is nearly 2 miles long, 7 miles around the base, a mile to the summit up the sloping side. It contains more than 7 billion cubic feet of granite above the surface. It stands alone, in the midst of a plain, isolated and solitary, with no other hills or mountains near it.

The plans for the Memorial contemplate a central or reviewing group, an infantry group, a cavalry group and an artillery group. In the central group will be Jefferson Davis, Robert E. Lee, Stonewall Jackson and 4 outstanding Confederate Generals selected by State Historians of the Southern States. General Lee, from the top of his head, to the hoofs of his horse, will measure 153 feet, or as high as a 12-story building. The other figures in the central group will be in a similar scale.

Below the central group will be carved out of the mountain, just above the base, an immense semi-circular Memorial Hall, dedicated to the women of the Southern Confederacy. No other sculpture of any other age remotely compares with this in magnitude or grandeur.

The visiting enamelers were entertained Monday evening, at the Capital City Club, by R. A. Weaver, Editor of the ENAMELIST and the following were guests at this Dinner: H. J. Swope, Laurence D. Bridge, F. G. Jaeger, Wm. R. Anthony, R. D. Wells, Paul P. Francais, D. E. Foley, A. E. Krebs, J. T. Robson, H. E. Ebright, H. R. Schneider, Charles Murty, W. F. Clausey, W. A. Dougherty, R. M. Town, M. E. Manson, Homer F. Staley, Walter Lindemann, H. G. Wolfram, R. R. Danileson, J. A. DeCelle, Richard H. Turk, Frank B. Mahoney, J. E. Hansen, B. F. Wagner, R. L. Foraker, B. T. Sweeley, J. Stanley

A little system prevents a lot of bungling.

Wishoski, R. L. Shugg, H. C. Gowdy, F. G. Sutphen, O. N. Earl, Wm. V. Knowles, John B. Knauss, C. M. Rankin, R. D. Landrum, Cullen W. Parmellee, and R. A. Weaver.

After a very delightful dinner, there was a great deal of discussion regarding the future of the enameling business, and all seemed to agree that the future looked very bright.

On Tuesday and Wednesday, there were sessions morning and afternoon devoted to discussions of various enameling problems and some very interesting papers were read by members of the society. We will print a number of these papers in the next issue.

On Tuesday night, the United Alloys Steel Co. entertained practically all of the enameling group at a Dinner, and on Wednesday night the annual banquet of the Society was held, at which many of the enamelers were guests of the American Rolling Mill Co.

M. E. Manson, of the Rundle Mfg. Co., was re-elected Chairman of the Enameling Division, H. G. Wolfram, of the Bureau of Standards continues as Secretary, and F. T. Mahoney, of the Humphreys Mfg. Co., was elected as councillor.

The officers for the American Ceramic Society for 1926-7 are: President, R. L. Clare, Federal Terra Cotta Co., Vice-President, B. Mifflin Hood, of the B. Mifflin Hood Brick Co., and Treasurer, H. B. Henderson, Standard Pyrometric Cone Company.

The next meeting will be held in Detroit and on account of this very central location, we hope there will be on hand the biggest crowd that ever attended a Ceramic Convention. The plans are already being made to furnish the finest kind of entertainment for them, and in addition to visiting the various enameling plants in Detroit, many can visit Cleveland, Buffalo, Canton, and other plants, where interesting enameling equipment has been installed.

* * *

The Galusha Stove Company of Rochester, New York, have been operating their own enameling department for some years and have recently added a large addition (60 ft. x 130 ft.), part of which will be used for gas range mounting space and part of which will be used by the enameling department. They use electric furnaces and find them very efficient and satisfactory.

Two-thirds of "Promotion" consists of "motion."

Chicago Enamelers Club Organized

On the 7th of January the first meeting of the Chicago Enamelers' Club was held. This is the second enamelers' club to be formed, the first being the Enamelers' Club of St. Louis.

B. F. Wagner, Chairman

Bruce F. Wagner, of Coonley Mfg. Co., Cicero, Ill., was elected Chairman of the new club, and F. E. Hodek, Jr., of General Porcelain and Manufacturing Co., Chicago, Secretary.

Speakers for the evening were H. C. Beasley of Coonley Mfg. Co., Prof. C. W. Parmelee of University of Illinois, R. D. Landrum and Wm. V. Knowles of the Titanium Alloys Mfg. Company.

The enamelers attending were: M. A. Snell, Benjamin Electric Mfg. Co., Des-Plaines, Ill.; A. H. Charles, Benjamin Electric Mfg. Co., Des Plaines, Ill.; J. W. Thornton, Banjamin Electric Mfg. Co., Des Plaines, Ill.; W. J. Oliver, Cole Mfg. Co., Chicago, Ill.; L. H. Menne, Peoples Gas Light & Coke Co., Chicago, Ill.; T. H. Hobson, Geo. D. Roper Corp., Rockford, Ill.; B. F. DeVorak, Crown Stove Works, Chicago, Ill.; Geo. Schmidt, Crown Stove Works, Chicago, Ill.; H. C. Beasley, Coonley Mfg. Co., Cicero, Ill.; J. R. Wassman, Wolf Mfg. Co., Chicago, Ill.; Albert L. Vodicka, Aetna Porcelain Enamel Co., Chicago; F. E. Hodek, Jr., General Porcelain Enamel & Mfg. Co., Chicago; E. P. Calkins, General Porcelain Enamel & Mfg. Co., Chicago, Ill.; B. F. Wagner, Coonley Mfg. Co., Cicero, Ill.; Robert C. Boyd, Chicago Hardwood Foundry Co., Chicago, Ill.

The Chicago district is a very logical place for a club, and we know that the enameling industry will benefit greatly from this progressive step which the Chicago enamelers have taken.

* * *

We understand that all of the furnaces of the Cribben & Sexton Company are being rebuilt. Full muffle furnaces are being installed.

A man all wrapped up in himself should be carried out.

RHCCO
A1

Ceramic Materials

MINERALS AND OXIDES

THEIR reputation for *quality* is guarded by exhaustive technical inspections. The experience and knowledge of R & H is always available to insure your full satisfaction.

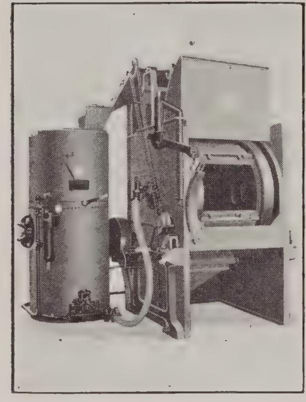
The
ROESSLER & HASSLACHER CHEMICAL CO
709 SIXTH AVENUE, NEW YORK

Chicago
Boston
New Orleans
Cleveland
Trenton
Pittsburg
Baltimore
San Francisco
Philadelphia
Kansas City

There is more hope for a soft head than a hard heart.

A New Direct Pressure Sand-Blast Barrel

It has long been recognized that the most economical method of Sand-Blasting metals is in the Sand-Blast Barrel. Pieces adapting themselves to this method of cleaning are of course limited to size that will freely roll within the Barrel drum.



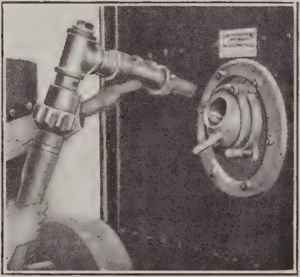
No. 3 Type "GH-1"
Sure Sand-Blast Barrel, without
Loading Device

As Sand-Blasting is such an essential part of the Enameling Industry production today, much of which is adaptable to this method of handling, a new Sand-Blast Barrel, recently developed by the Pangborn Corporation of Hagerstown, and first exhibited at the Annual Foundry Convention at Syracuse October last, will have our readers' attention.

It is of the Direct Pressure Type which is the most intensive application of the Sand-Blast. Most Sand-Blast Barrels, like this one, use two nozzles, one at either end of the drum, and it has been the custom to feed the two nozzle lines through branch connections from a single mixing chamber. In this new Barrel there is a mixing chamber at either side of the Sand-Blast tank giving individual feed to each nozzle, both operated simultaneously by a single control. These mixing chambers with all other working parts of the Sand-Blast machine, are on the outside of the tank, above the floor level, and of easy access. They are designed with a choke relief, which, by unscrewing a hand-crab, gives access to the Sand-tank for the relief and blowing out of any choke that may occur, and without disassembling or removing the mixing chambers, or even disconnecting the hose.

This Sand-Blast uses Sand or Steel Abrasives without change and at all pressures of 20 pounds or higher.

The Sand-Blast Barrel itself also has equally unusual features. Nozzles are held in a universal joint on the side of the Barrel casing, and by double adjustment are quickly positioned both vertically and horizontally for the greatest efficiency to different classes of work. The nozzles are quickly removable for inspection or change without the use of any tools whatever.



Adjustable nozzle feature on
Types "GH" and "GH-1" Direct
Pressure Sand-Blast Barrel

Both the main driving members and clutch run in oil bath, encased dust tight. The used abrasive and refuse from the pieces passes through perforations in the

Good Enameling Metal must be Sound

The most skillful enameler can obtain the best results only when the enameling base is right. Toncan Metal is made to meet the requirements of the particular enameler.

Specially selected iron from which impurities have been practically eliminated, careful attention to every detail in melting and rolling, and rigid inspection at every step; all this is necessary to produce a sound enameling base. These precautions are used in the production of Toncan Metal.

Send for samples and make comparative tests.

TONCAN METAL
ENAMELING SHEETS

United Alloy Steel Corporation, Canton, O.

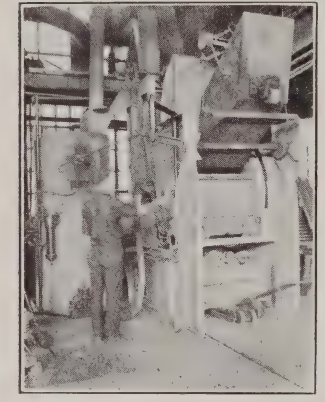
New York
Syracuse
Cleveland
Philadelphia
Pittsburgh
Chicago
Detroit
San Francisco
Indianapolis
Portland

If a man is satisfied with himself, he finds others disappointing.

drum to the elevator boot at the rear of the Barrel, and is raised to a Separator above. By double-screens and connections to the exhaust system clean usable abrasive is returned to a storage tank above the Sand-Blast Machine. Large material that would clog the nozzle is rejected, while dust and light material, without abrasive value, are carried off by the Exhaust system.

The elevator operates by a shaft-drive, integral with the Barrel driving mechanism, and allows operation of the elevating and separating system, while the Barrel drum itself is idle.

The Barrel is made in two sizes—the smaller or No. 2 has a drum 30" in diam. and 40" long, with a load capacity of 5 cu. ft., and the whole is encased with rolling door in front that makes its operation dustless. The No. 3 or larger barrel, has a drum 50" in diam. and 40" long, with a load capacity of 16 cu. ft. This size is designed particularly for large production, and of course with its larger drum size will admit of cleaning larger pieces also.



Type "GH-1" No.3
Direct Pressure Sand-Blast
Barrel, showing "Loads Quick"
Device in Operation

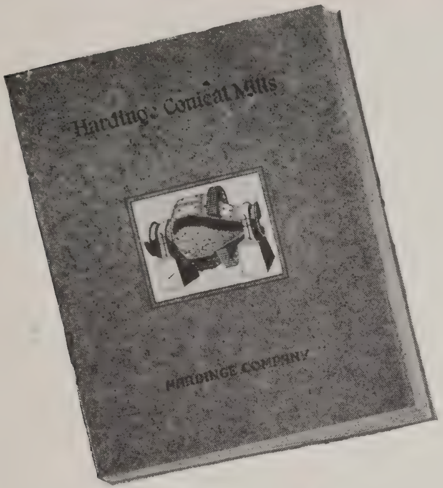
The Pangborn Corporation has recognized the fact that in Sand-Blast Barrel cleaning a large portion of operating time required for loading and unloading was entirely non-productive. This larger Barrel is provided with a lifting door and can be equipped with a "Loads Quick" device by which, with overhead hoist, or crane, a skip holding a full Barrel load can be raised from the floor and deposited in the Barrel in 30 seconds. Clearance under the Barrel is enough to receive an unloading tote, which also receives the full Barrel charge without handling, by simply rotating the Drum.

A chute-plate inside the drum carries the entire charge to the unloading tote. With this arrangement the Barrel can be unloaded and loaded complete from charge to charge in less than 5 minutes, and thus turn idle time into production.

* * *

The many friends of Earl Simpson, formerly of the American Range and Foundry Co., will be interested to know that he has joined Mr. Harvey Edmund as Secretary and Treasurer of Universal Heater Manufacturing Company of St. Louis, Missouri. This Company manufactures gas water heaters, gas laundry stoves, hot plates, cookers and gas range flues. Mr. Simpson has had unusual training in efficiency work and production methods and will undoubtedly add a great deal of strength to the Universal organization. We wish him the greatest success in his new work.

Praise the man whose bread you eat.



Announcing the New

Hardinge Catalog

On Grinding and Pulverizing

Recent developments of an important nature and changes in design and construction are covered in the new catalog.

Detailed specifications and capacity tables are given for all standard sizes of Hardinge Conical Mills, together with operation data and valuable information on grinding practice in mining and industrial fields.

Write for copy of Catalog 13-A

HARDINGE COMPANY
YORK, PENNSYLVANIA

WORKS AND
MAIN OFFICE
YORK, PENNA.

BRANCH OFFICES
NEW YORK, N.Y., 120 BROADWAY
SALT LAKE CITY, UTAH: NEWHOUSE BUILDING

CABLE
ADDRESS
"HARDINGMIL
NEW YORK"

Honest thinkers are honest doers.

Another Prosperous Year For Enduro

Our friend E. M. Colquhoun doesn't know a whole lot about the art of enameling but he does know a lot about successful manufacturing. In addition to operating the Wincroft Stove Works and one or two foundries, he also finds time to successfully operate the Enduro Porcelain Enameling Company at Middletown, Pa.

Last year in the ENAMELIST we quoted from the 1924 Enduro statement, showing that the company had made a net profit of over $26,000 on a gross business of $107,000.

For 1925 the annual statement showed a profit of $27,379.49 with a gross business of $127,000. The smaller percentage of profit is caused by lower prices secured for the work.

The original investment of the company is only $60,000; the present surplus is $85,000 and the reserve for depreciation approximately $21,000.

Their dividend record is very unusual. The company started operating Sept. 1, 1920. Since then they have paid 30% in preferred dividends and seven dividends on the common stock, totaling 21%.

We wish we could print a record like this every month, so we could inspire our readers with the profits to be gained by careful management and excellent shop operation. The officers are E. M. Colquhoun, Pres., Geo. E. Daily, Vice-President and Supt., and E. W. Snoke, Sec'y and Treasurer.

* * *

The Short Course in Clay Working and Enameling, given by the University of Illinois, met with even greater success this year. Those who attended from the enameling industry are: Clyde Seiz, Quincy Stove Mfg. Co., Quincy, Ill., Richard Elsner and Albert Oesterle, Belleville Enameling & Stg. Co., Belleville, G. J. Merson, Jones Hollow Ware Co., Baltimore, Marie Regnier, Manager, Silica Enamel Sign Co., St. Louis, and Vernon Grant, Rhinelander Refrigerator Co., Rhinelander, Wisconsin.

* * *

We were mighty sorry to hear of a very disastrous fire in the Klein Stove Company enameling plant at Topton, Pa. New equipment will be installed at the earliest possible date.

Some men haven't sense enough to come in out of the moonlight.

B. F. Drakenfeld & Co., Inc.
Established 1869

IMPORTERS AND MANUFACTURERS OF
ENAMELERS' CHEMICALS

Antimony Oxide
Codmium Sulphides
Chrome Oxides
Cobalt Oxide
Copper Oxides
Manganese Dioxides
Nickel Oxides
Nickel Salts
Tin Oxide, White

Main Office: 50 Murray St. New York

Laziness never paid an income tax.

Enamel Making is Fast

IT was not very long ago that all enameling production was dependent upon inherited formulas and jealously guarded secrets.

Improvements were finally secured only after countless experiments. An undetected variation in raw materials usually proved a genuine catastrophe, finally solved by mere chance.

DON'T DEPEND ON CH

Buy

THE FERRO ENAMEL

coming an Exact Science

Today Ferro produces millions of pounds of enamel in smelters pyrometrically controlled — using raw materials rigorously inspected and analyzed.

The Ferro Organization includes a complete research laboratory, four graduate ceramic engineers, seven practical enamelers and an ambition to make the finest enamels ever produced.

E—DEPEND ON FERRO

Bob

G COMPANY, Cleveland

Did You Select Your Name From This List?

NAMING a baby is often a tough job. There are various reefs which must be diplomatically avoided before the family is agreed as to whether the newcomer should be named after rich and childless Uncle Jack of Keokuk, aristocratic but penniless Cousin Fanny Albemarle of the F. F. V., the baby's paternal grand-dad, or his maternal grand-dad—or whether he should carve his way to fame as a "junior."

Naming a business baby apparently isn't deemed so serious a matter.

"Bill," sings out one partner to the other, "what'll we call our company? I must order some letterheads and have the sign painted."

And then Bill usually comes back with one of these thirty-one names—"Acme," "American," Atlantic," "Atlas," "Central," "City," "Columbia," "Commercial," "Economy," "Federal," "General," "Ideal," "Independent," "International," "Metropolitan," "National," "Peerless," "Perfection," "Reliable," "Republic," "Standard," "Star," "State," "Union," "U. S.," "Universal," "Victor," or "World."

It doesn't much matter whether Bill is christening a bank or lunch counter, a manufacturing concern or a laundry, he—and his partners—are usually satisfied with one of these titles. If you don't believe this, pick up some metropolitan telephone directory and see what you will find.—*Nation's Business Magazine.*

* * *

The Standard Sanitary Manufacturing Company has declared a quarterly dividend of $2 a share on the common stock, an increase of 75 cents a share over the previous quarterly payment. The regular quarterly dividend of 1¾ per cent was declared on the preferred stock. Both dividends were payable February 20 to stock of record February 4.

* * *

The Allied Industrial Products Company, manufacturers of Seramico Oil Remover and Seramico Neutralizer which have been standardized by the majority of the leading Porcelain Enameling plants throughout the United States and Canada have recently purchased the property at 120 to 126 North May Street and are now about to occupy same.

They contemplate adding additional stories in the near future so as to take care of their rapidly expanding business in the Porcelain Enameling field and at the same time enable them to render more prompt and efficient service to the Porcelain Enameling Metals Industry.

* * *

Gustavus A. Weber, member of Staff, Institute for Government Research, has written a very interesting book, called "The Bureau of Standards: Its History, Activities and Organization," which some of our readers may care to order. It can be obtained from the Johns Hopkins Press, Baltimore, Md. Price $2.00.

Eat, drink and be merry—and tomorrow you'll have to borrow lunch money.

Quality and Economy
Are Secured Together
with the
"HURRICANE"
CONTINUOUS DRYER

Besides its labor saving features, the "HURRICANE" Automatic Dryer for Enameled Ware is remarkable for the uniform manner in which it applies heat. All parts of the drying material are subjected to an equal amount of drying air. There are no overheated (over-dryed) places, and therefore there is no need for an overlong drying time. This gives quality and reduces cost.

Write For Specifications

THE PHILADELPHIA DRYING MACHINE CO.
Stokley Street above Westmoreland, Philadelphia, Pa.

Canadian Agents:
Whitehead, Emmans, Ltd.
Montreal

HURRICANE
Ideal Drying Every Day

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.

Honest doubt is better than obstinate indifference.

Porcelain Enamel Digest

The Standard Gas Equipment Corporation recently issued and sold $1,250,000 worth of 7% preferred stock. Mr. R. C. Hoffman summarized the position of the company as follows:

The Baltimore Gas Appliance & Manufacturing Company, in 1924, acquired the business of the William M. Crane Company, a New York Corporation, originally founded in 1885. At that time the name of the Baltimore Gas Appliance & Manufacturing Company was changed to Standard Gas Equipment Corporation, and under this name the business of the two companies has been conducted. Both companies have shown a remarkably consistent growth. The Baltimore company's net annual sales increased from $167,000 in 1912 to over $2,000,000, and William M. Crane Company's net annual sales increased from approximately $13,000, in 1885, to more than $2,500,000, in 1924. Neither company has ever shown a loss in any one year since its inception.

Standard Gas Equipment Corporation has now entered into a contract to purchase the assets and business of Rathbone, Sard & Company of Aurora, Illinois, one of the oldest manufacturers of gas appliances in the country, it having started business in 1830 in Albany, N. Y. The trade name under which the Company manufacturers is "Acorn," well known throughout the country.

Net earnings of Standard Gas Equipment Corporation, Rathbone, Sard & Company together with the consolidated net earnings, based on the above capitalization, available for Preferred dividends, after adequate provision for all charges, including interest, depreciation and Federal Taxes, have been as follows:

	Consolidated Sales	Standard Gas Equipment Corporation	Rathbone, Sard & Company	Consolidated Net Earnings
1922	$5,920,765	$653,692	$165,259	$818,951
1923	6,617,648	646,554	193,058	839,612
1924	6,126,407	541,179	108,641	649,821
1925 (11 mths.)	5,316,312	408,642	37,023	445,665

* * *

Mr. F. M. Burt recently employed as an Enamel Specialist with The Trumbull Steel Company and formerly connected with The Carborundum Company, has joined the Sales Force of The Massillon Refractories Co. At present, he will be located at Pittsburgh and will have charge of the placing of their "ALUMITE" Refractories in the Vitreous Enameling Industry.

In the tricky delights of love he who is blindest sees best.

Before Building More Furnaces—*Consider*

If you need more Cast Iron Production buy Ferro Double Quick Forks and Double or Triple Deckers.

Often times one furnace can be made to do double duty—saving space, investment, labor and fuel.

If you need more Sheet Steel Production—buy Ferro Hanging Racks.

Why not use the entire height of your muffle?

If you really need more Furnaces—buy from Bob. You get the benefit of the dozens of furnaces built by us for others.

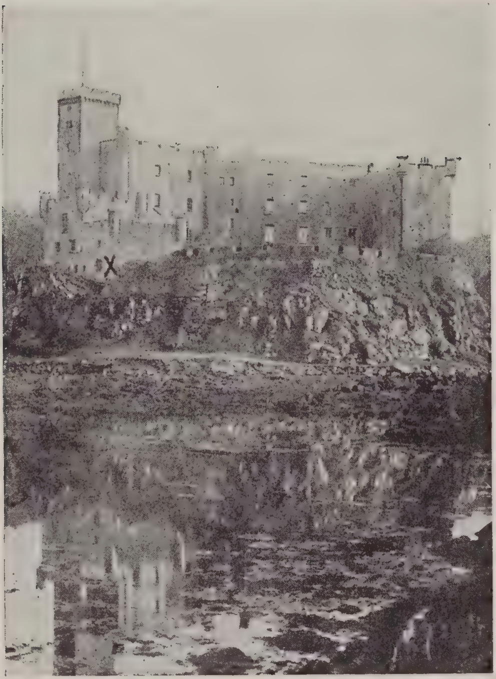
Write for description and prices.

The Ferro Enamel Supply Company
Cleveland, Ohio

A gossip in time tells nine.

F. Koeller & Company, of Germany, has written one of our readers an interesting letter as follows: "As you know, the Rhine has flooded, causing great havoc, even to the complete sweeping away of some villages. Hence, there has had to be a delay in shipping Vallendar Clay, and the whole river traffic was suspended." Most of us didn't realize, when we read of the Rhine floods, that they might interfere with the production of good enamel in this country.

* * *

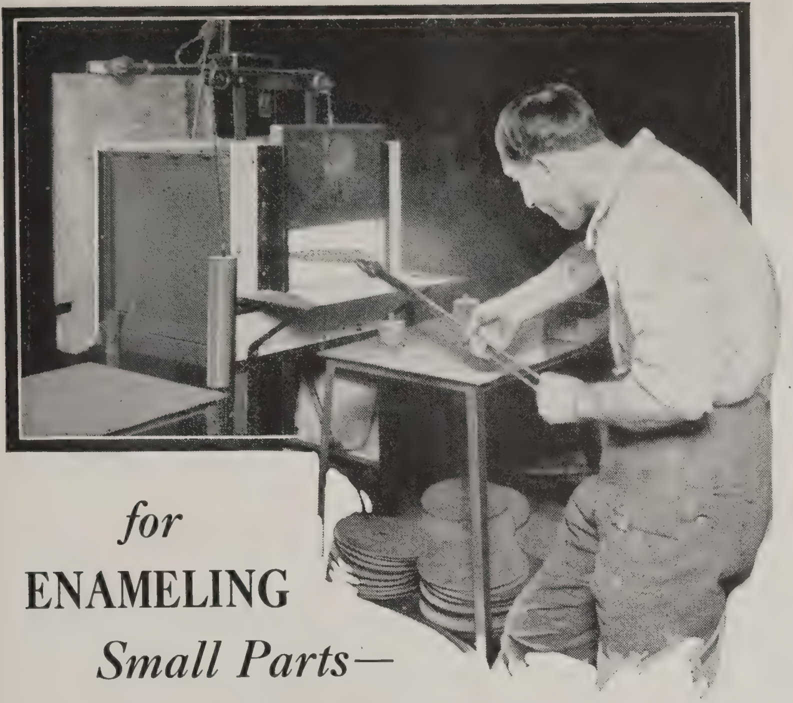


This is Dunvegan Castle, on the Island of Skye, Scotland. It is over 1000 years old, having been built in the 9th century by a noted family of that time called the Macleods of Macleod. It is situated on a rocky promontory, making it difficult of access. Therefore, the Macleods of Macleod became one of the most powerful families of the time.

Among the interesting relics preserved in the castle is a yellow silk banner, captured while one of the Macleods was on a crusade. There is also an ancient drinking horn which contains two quarts and had to be drained at a single draught by every new chief before he could wield authority.

It is interesting to note that in this ancient castle, the Kohler Company, of Kohler, Wis., U. S. A., recently installed one of their Kohler Electric Plants; installation being in the section of the castle marked with an "X." The Kohler Company are also manufacturers of porcelain enameled sanitary ware.

A maid that laughs is half taken,



for
ENAMELING
Small Parts—

SALES OFFICES
Boston—New York
Cleveland—Chicago
San Francisco

The American Badge Company and the L. D. Auld Company use several Hoskins Furnaces, like the one shown here, for the enameling of badges and various emblems of delicate design.

The temperature is of course very accurately and easily controlled; the atmosphere is free from harmful gases—and the finished product is an almost perfect piece of enameled work.

For experimental work, or small scale production, these furnaces are ideal. Send for catalog.

Hoskins Manufacturing Company
4430 Lawton Avenue Detroit, Mich

Hoskins Electric Furnaces

Originators and Manufacturers of Chromel The Alloy that made Electric Heat Possible

The January meeting of the St. Louis District Enamelers' Club was held on January 26th, at the American Annex Hotel, St. Louis. At this meeting, the Secretary read a letter from W. V. Knowles, telling of the organization of the Chicago Enamelers' Club, and thanking the St. Louis Club for their help and inspiration.

Mr. O'Donnel of the Travelers Insurance Co. delivered a message on Industrial Safety. Mr. F. G. Jaeger delivered a paper on the Action of High-Grade Firebrick Under Actual Working Conditions. Mr. M. Bigely of Superior Enamel Products Co. gave an excellent paper on Good Millroom Practice.

Mr. Guenther, of the Bridge & Beach Mfg. Co., St. Louis, became a member of the club, thus making the representation of enamelers 100%.

Other new members are A. Oesterle, of the Belleville Enameling & Stg. Co., A. Hasen and H. Seals of the Wrought Iron Range Co.

To the great sorrow of all the members of the Club, Mr. Ed Eigenbrot resigned as Secretary due to the fact that he is no longer in the enameling business. Miss Marie Regnier, Manager of the Silica Enamel Sign Co., St. Louis, was appointed temporary Secretary.

* * *

Largely through the interest and financial help of the Canadian National Clay Products Association, a course in Ceramics has been included in the curriculum of the University of Toronto. It is stated the Association will pay a large share of the operating expenses of this new department for the first 3 years.

* * *

We are indebted to the M. O. Waugh Publicity Organization for the article given in this issue on Cowan Potteries.

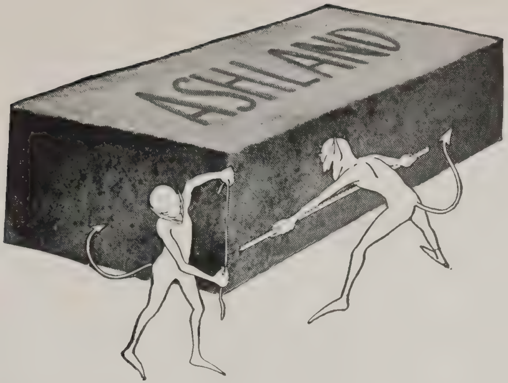
* * *

A prominent soap company have found that by giving a white, ten quart, dish pan, with a certain assortment of their products, at a very popular price that they are having a wonderful response and that it is a great advertising scheme. To date well over 100,000 dozen have been manufactured in two prominent plants.

* * *

EXCELLENT OPPORTUNITY. For dry process enameler. Must be good production man, know chemistry of enamels, and be able to handle men. Write qualifications to Box "A" ENAMELIST.

The voice with a whine loses.



The Invisible Costs In Your Furnace Lining

EVERY time you line a furnace you pile up two invisible costs in addition to the easily seen cost of the brick itself.

First the cost of temporary delays and possible shutdowns.
Second the cost of labor, by far the biggest cost of all.

No brick made can entirely eliminate these invisible costs. But there is a brick whose resistance to the little devils of high temperature renders them much less formidable.

If you want to prove for yourself the economy of Ashland, the fire brick that lasts—write us what you are up against.

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND, KENTUCKY.

Ashland brick is also carried in stock at each of the following offices:

110 East 42nd St., New York City
20 South La Salle St., Chicago, Ill.
Southeastern and Cruze Sts.
Indianapolis, Indiana

1252 East 55th St., Cleveland, Ohio
3rd and Larned Sts., Detroit, Mich.
Cuba 49, Dptos 401-2
Havana Cuba

WHAT DIFFERENT MANUFACTURERS HAVE DONE TO ELIMINATE NEEDLESS VARIETY

Paint manufacturers have cut 43 shades to 32; 13 shades of floor paint to 8 and 20 shades of enamel to 10.

Manufacturers of hammers and axes have reduced 2,753 types and sizes to 761.

Stove parts have been cut from 2,982 to 364.

Face brick manufacturers have cut from 75 to 2 sizes.

Pocket knives have been reduced in variety from 1,500 to 300.

A manufacturer of collars has cut 150 styles down to 5.

1909 models of farm implements have been reduced to 137.

The steam radiator, the hot air furnace and other modern heating devices have all assisted materially in reducing the number of stoves in use. But only recently, the up-and-coming hardware dealer was forced to carry in stock 2,982 stove parts. Today they struggle along with only 364 parts.

* * *

In a recent issue of the New York Times, the American Electric Corporation announced a large issue of stock. Mr. Brinton F. Hall furnished the following information regarding the company.

"American Electrice Corporation has been organized under the laws of Delaware to acquire the entire assets and business or the entire Capital Stock of Belding-Hall Company, second largest manufacturer of refrigerator cabinets in the United States, and to manufacture and distribute a line of electrically operated refrigerating machines under the trade name "ElectrICE."

Belding-Hall Company owns and operates plants located at Belding, Michigan, on 14 acres of ground, comprising substantial four-story brick buildings covering a ground area of five acres and having an aggregate floor area of more than 425,000 square feet. These plants are completely equipped with modern machinery and labor-saving devices and are favorably situated with relation to the sources of principal raw material requirements and important markets for finished products. Equipment includes a modern power plant which is economically operated through utilization of waste material for fuel, a new modern porcelain enameling plant, lumber storage yards, warehouses and railroad sidings. The new company plans to provide additional manufacturing facilities as required from time to time to accommodate the production requirements of "ElectrICE" electric refrigerating machines.

* * *

The Celite Products Co., manufacturers of "Sil-O-Cel," announce a new booklet on "Celite, an Admixture for Concrete." They will be very glad to send you a copy of this, without obligation. Address them at 1320 Hope Street, Los Angeles, Calif.

How the women do reward the manufacturer who promises to make them more attractive!

JOHNSON-PORTER CLAYS FOR FLOATING ENAMELS

THESE clays are selected with great care from certain thin veins occuring in the vast clay beds of the Johnson-Porter Clay Company. They have proven superior to all known clays in possessing in special degree the particular combination of properties necessary for floating enamel successfully.

Johnson-Porter enameling clays are being used with excellent results by foremost firms in every branch of the enameling industry. We ship clays regularly in large quantities to more than fifty plants making stoves, kitchen utensils, table tops, refrigerators, signs, sanitary wares and specialties.

We shall be glad to supply enamelers who wish to test these clays with liberal samples and ask that they specify the type of work they are doing and their method of applying enamel.

EXCLUSIVE SALES AGENTS

Metal & Thermit Corporation

Ceramic Department, Homer F. Staley, Mgr.
120 Broadway, New York

A woman's face is her fortune only when it draws much interest.

Consolidation of the Consolidated Lead and Zinc Company and the Underwriters Land Company was approved by stockholders of the two companies here recently. The properties merged are valued at more than $3,000,000 and consist of nine mills in the Picher, Okla., district, in addition to leases and royalty interests.

The company will be incorporated under the laws of Delaware. Directors elected will include John B. Swift, President of the Eagle-Picher Lead Company, Cincinnati, and A. E. Bendelari, Vice-President and Treasurer of the Eagle-Picher, Chicago.

* * *

Mr. H. H. Wolverton, who has been connected with the Kalamazoo Stove Company for many years, has achieved notable success as Superintendent of that company. This is partially due to the fact that he has such splendid co-operation from every department and every man in each department. Posted on the wall of his office, Mr. Wolverton has a very interesting code, and we can say that these rules have been used by him with great success. They are as follows:

> There isn't anyone trying to "Get your Goat."
>
> Nobody is worrying that much about you. They have their own troubles.
>
> The fellow that works next to you has a good intent to see you succeed, just like your feeling, toward him.
>
> Maybe he isn't telling you—it isn't necessary—he just feels it.
>
> You and I and the other fellow succeed and are happy when we recognize daylight.
>
> This world is an interesting place in which to live and work. So lets never believe its night when its daylight and we are surrounded with good fellows who are doing their part.
>
> —***H. H. Wolverton.***

* * *

It pleased us very greatly, the other day, to receive check, and the following letter from George W. Holman, who is Vice-President of the Smoot-Holman Company, of Inglewood, California: "During the year 1925 we received much pleasure from reading the ENAMELIST and we hope you will continue along the same lines in the future. So that the right number of our people will receive this magazine whom we know are interested in it, we give you herewith their names, and enclose our check for seven subscriptions."

* * *

At a recent meeting of the Canton Stamping & Enameling Company, the following new officers were elected:

H. T. Bebb, President and General Manager; E. F. Hoerger, Vice President and Treasurer; R. G. Geiger, Vice President and Secretary and Sales Manager; S. L. Gueutal, Assistant Secretary and Assistant Treasurer.

Common sense is better than cleverness.

Insure Meeting Your 1926 Production Schedule by Using

"ALUMITE"

Refractories in your Burning and Smelting Furnaces

"ALUMITE" Muffles are manufactured in High Aluminous Clay, Silicon Carbide, Sintered Aluminum Oxide and combinations of the above as your individual work and plant conditions may require.

WITH 38 YEAR'S EXPERIENCE behind the maunfacturing personnel and our many years observance of Refractories in the Enamel Industry, we can undoubtably assist you in reducing your burning costs and eliminate costly production interruptions. Our Engineering Department is at your service.

CONSULT US.

Send for Bulletins Nos. 21 and 22

THE MASSILON REFRACTORIES CO.
(Founded by W. G. Hipp)
MASSILON, OHIO
On the Lincoln Highway—Convenient for Truck Delivery

We read that Theodore Ahrens, President of the Standard Sanitary Co., Pittsburgh, was recently elected life honorary member of the Louisville Board of Trade, in recognition of his efforts in the development of Louisville. Mr. Ahrens has given a quarter of a million dollars toward the establishment of a trade school there, and besides is the largest employer of labor in the state.

* * *

The Iceola Corporation, manufacturers of electrical refrigerating units, has taken over the plant and products of the Valley Engineering Company, Dayton, Ohio. A new factory is to be established, later, at Indianapolis, Ind. The incorporators are W. N. Thompson, formerly president of the Stutz Motor Car Company of America, A. J. Parry, formerly Vice-President of the Parry Mfg. Co., and the Oakes Mfg. Co., and Walter Myers.

* * *

When one of our editors visited Boston recently, he met one of the old time craftsmen in the enamel industry—Mr. Olaf J. Helgesen, 34 James St., West Newton, Mass.

Mr. Helgesen presented him with some watch dials and other ornate work that he has produced. It is wonderful—the artistic work produced by these craftsmen who loved their work and took pride in its execution. Mr. Helgesen also presented him with a beautiful enameled inlaid silver piece which he had produced over 30 years ago, as his examination when he had completed his apprenticeship in Norway. He was most interesting and it was a treat to talk with him.

* * *

The Sheet Steel Trade Extension Committee, Oliver Bldg., Pittsburgh, Pennsylvania, is doing some work that should be of interest to the enameling industry. This organization, supported by twenty-nine steel companies has in its files the names of 150,000 users of steel and steel products. To date, 80,000 have been filed and cross filed so that they can be gotten at either by name, locality or type of business.

Twenty-five thousand copies, monthly, of "The Sheet Steel Trade Extension Committee Booklet" and "Making Markets" go out free to a very great variety of companies interested in steel and steel products. These are available to any enameling concern at no charge. Enameled steel has a prominent part in these publications and close consideration is given to any new developments and possibilities in the further use of enameled steel.

This organization is very likely supported in part by the steel mills from whom you make purchases and functions primarily to help you increase your business.

* * *

ENAMELER WANTED. High grade kitchenware concern wants experienced enameler who is thoroughly informed as to all processes, especially job work in colors. Write Box "G" ENAMELIST, and we will put you in touch with proper party.

When a man or motor knocks, it shows lack of power.

TAM
ZIRCON

In Sheet Steel and Cast Iron Enamels

2% Tam Zircon Milled Raw with Ground or Slush Coat Enamels

—BROADENS the firing range of the ground coat and makes it more fool proof;

—LESSENS the losses from chipping and crazing;

—ROUGHENS the ground coat and makes it hold the cover coat better;

—FACILITATES the complete escape of occluded gases.

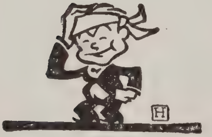
and it's so — *and because it is a specific correction for the major hazards of ground coating, a multitude of minor benefits follow as a direct consequence.*

The Titanium Alloy Manufacturing Co.
Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT
R. D. Landrum, *General Manager*
6007 Euclid Avenue CLEVELAND, OHIO

Bits of Frit

"Flexible glass" is said to have been invented in Austria, but we suspect this has long been in use among bootleggers purveying "full quart" bottles.

* * *



Doctor—Are you bothered with things dancing before your eyes?

Tired Business Man (ardent musical comedy first-nighter)—No; in fact, I rather like it.

* * *

ONLY A COLD

Miss Lucille La Verne, the American actress, tells an excellent story of a Negress maid who once came to her tragically and said, "I'se lost my instinct, miss!"

"But," said Miss La Verne, aghast, "you must be mistaken. You can't have lost your instinct."

"Oh, yes, I has, Miss," repeated the colored lady tearfully. "I can't smell anything at all."—*Sporting and Dramatic News.*

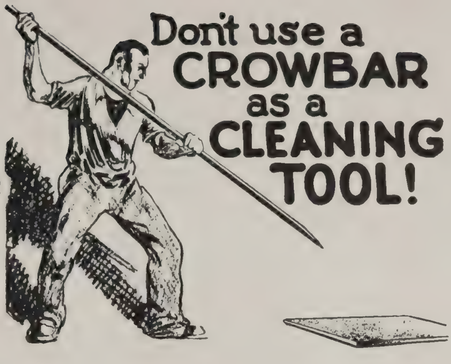
* * *

A BAFFLING RAFFLE

Rastus and his wife, driving to town in their decrepit flivver, had parked it casually in the first available space. While they were away a traffic officer attached a numbered tag to the vehicle for parking in a prohibited zone. On their return, Rastus noticed the tag and was for throwing it into the street, but Rebecca restrained him.

"Sabe de ticket, honey," she said. "Dat number might win sumthin'."

It's the black sheep who usually paints things red.



Don't use a CROWBAR as a CLEANING TOOL!

Metallic abrasives punish the surface of metal unnecessarily—breaking thru its "skin," and giving it a "greasy, graphite-like smear" which defeats the enameler.

They also require an *excess of AIR*—the largest cost-item in sandblasting.

FLINT SHOT—the universal mineral abrasive—is now used by a majority of all enameling plants in the United States and Canada. It has defeated metallic abrasives in every contest.

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

"Sioux Brave at a Revue," says a heading. This tribe, of course, has the reputation of being able to suffer pain in stoical silence.—*Punch*.

* * *

"I hear you own a motor car now."
"Well, in partnership with the motor car company."
—*Toronto Telegram*.

* * *

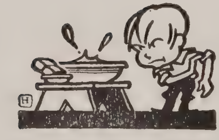
SCORCHED 'IM!

There was a terrible ado in the Busy Bee restaurant.

"What's all the fuss here? asked an incoming patron.

"Oh," replied the proprietor, "the fire-eater from the circus was in here and he burned his mouth on the soup."—*American Legion*.

* * *



MOST IMPORTANT

Small Boy (returning from oculist's, showing his first spectacles to admiring little sister)—You know, I've not got to wear them always—only for close work.

Sister—What do you call close work?

Small Boy—Oh—well—eating, and so on.

—*Punch*

* * *

A typical American home will be exhibited in France next spring. It should carry the sign:"We'll be back when you see us."

Many a sailor's been wrecked on a permanent wave.

Ingot Iron Enameling Sheets meet exacting requirements

THAT'S why so many manufacturers of enameled products use ARMCO Ingot Iron exclusively. This quality sheet iron assures a product that satisfies the customer and pleases the ultimate consumer.

Because of its uniformity, ARMCO Ingot Iron tends to reduce the loss from culls which is such a large item of expense where ordinary steel sheets are used. Day in and day out, year after year, the enameler is enabled to turn out a product that is much more economical to manufacture, and easier to sell.

ARMCO Ingot Iron measures up to carefully maintained standards—purity, homogeneity, virtual freedom from occluded gases, and possesses the smooth, velvety surface which is indispensable to the production of a clean, adherent enamel coating.

The American Rolling Mill Company
Middletown, Ohio

(Export) The ARMCO International Corporation

Cable Address: ARMCO Middletown

The Sign ARMCO TRADE MARK REG. U.S. PAT. OFF. of Quality

ARMCO TRADE MARK **INGOT IRON**
The Purest Iron Made

CLEAVE 'EM AND LEAVE 'EM

Proprietor—You know how to serve customers?

Applicant—Yes, sir, I can serve 'em either way.

Proprietor—What do you mean—either way?

Applicant—So's they'll come back, or so's they won't.—*N-o-g-g-l-e.*

~~~

THE TEST

Customer—Will these shoes wear long?

Dealer—Wear long? Why, sir, nobody has ever yet come back for a second pair!—*Progressive Grocer.*

~~~

NEW TO HER

He—Honestly, now, do you women like egotistical men as well as the other kind?

She—What other kind?—*Life.*

~~~

"Did you behave in church?" asked an interested relative when Junior returned from the service.

"Course I did," replied Junior. "I heard a lady back of us say she never saw a child behave so."—*Exchange.*

~~~

ONE FINE JOB

President Havelock Wilson, of the International Seafarers' Federation, said on his recent visit to New York:

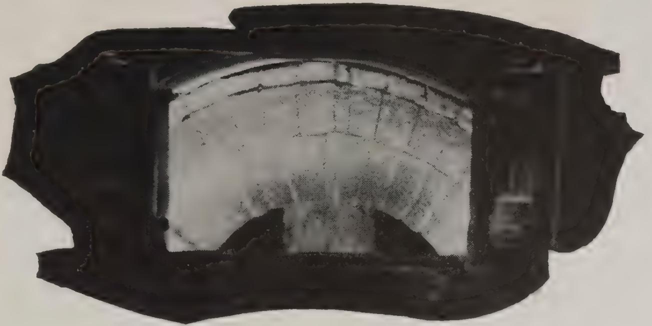
"American labor is well off; no doubt about that; but the way some of your millionaires talk, you'd think your labor was better off than the old Swede's son.

" 'My son,' chuckled the old Swede, 'he got one fine job now.'

" 'What doin'?" somebody asked.

" 'Workin' on Henry Ford's night shift, that's what doin'. Oh, a fine job. He works all night and saves his lodgin', and then he sleeps all day and saves his food'."—*Wall Street Journal.*

When a man sits down to wait for his ship to come in, it usually turns out to be a receivership.



REFRACTORIES

FOR HIGHER DUTY

Crystolon and Alundum Bricks and Plates are built for extreme temperatures.

They give long and lasting service in piers and muffles, in enameling furnaces where high temperatures must be maintained while work is going in and out of furnace.

They are strong, true to shape and heat resisting.

Use them and you'll have fewer shut downs for repairs.

The difference in first cost is saved by using a quality product.

Prompt shipments are made from stock.

High grade bricks should be laid with a cement as high in quality.

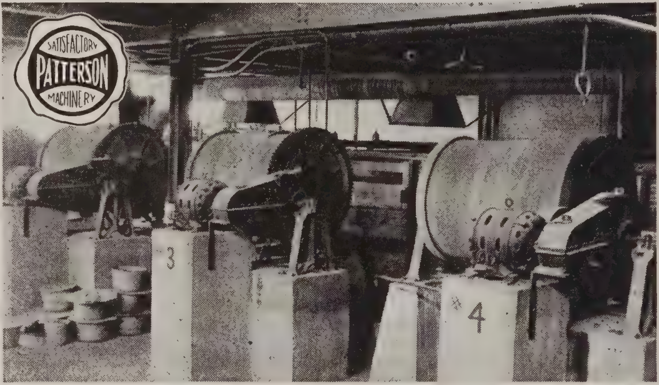
ALUNDUM CEMENT fills the requirements to the highest degree. Shipments made from stock.

NORTON COMPANY, WORCESTER, MASS.

NORTON REFRACTORIES

TRADE NORTON MARK

PERFORMANCE
COUNTS!



A Typical Installation

DETROIT VAPOR
AMERICAN STOVE
BOHN
DELCO
AMERICAN RADIATOR
INGRAM RICHARDSON
STANDARD SANITARY
FERRO-ENAMEL
IRONTON
JEWETT REFRIGERATOR
BELLEVILLE ENAMELING
VITRIFIED IRON PRODUCTS CO.

The Patterson
Foundry & Machine Co.
Richard L. Cawood, President
East Liverpool, Ohio
U. S. A.

Builders of
SATISFACTORY PEBBLE MILLS

Written by Users of

TAM OPAX

"You know, of course, that we are using Opax exclusively now. I am using the same percentage that I did of tin oxide, 6% of the frit added in the mill, and although I cannot say it is any better it certainly is just as good. We would not tolerate the slightest lowering of the quality of our white."

"I felt my way slowly with Opax, starting with 3% Opax and 3% tin oxide. This combination was used for several weeks, and then I started to increase until I eliminated all of the tin. I have used nothing but Opax since the middle of November."

Dec. 23, 1925

BY THE ENAMELING SUPT. OF A 12 FURNACE ENAMELED COOKING WARE PLANT

"In the first place, OPAX has entirely replaced tin oxide in our plant. We use it in both the smelting and the mill, in both Cast Iron and Steel enamels."

Dec. 28th. 1925

BY THE ENAMELER OF A 7 FURNACE PLANT MANUFACTURING ENAMELED STOVE PARTS

"Up to this time, I have only been able to replace 5% of our 8% of tin oxide added at the mill, with OPAX. This mill mix we have used regularly for some time. This gives us a saving of $16.00 per thousand pound mill load, an item certainly worth considering."

Dec. 26th. 1925

BY THE ENAMELING SUPT. OF A 6 FURNACE SPECIALTY ENAMELING PLANT

AMERICA POSTAL COMMERCIAL THE PULSE OF THE WORLD THE WORLD

gram, subject to the terms on back hereof, which are hereby agreed to.

Dec. 31, 1925

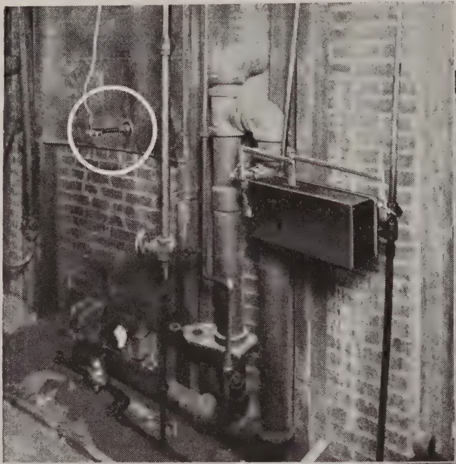
Ship immediately four tons Opax through freight from Chicago. Advise.

BY THE PURCHASING AGENT OF A LARGE PLANT MANUFACTURING ENAMELED BATH TUBS

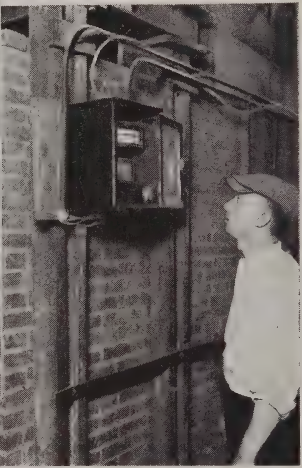
The Titanium Alloy Manufacturing Co.

Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT
H. D. LANDRUM, GENERAL MANAGER
6007 EUCLID AVENUE, CLEVELAND, OHIO

Brown Indicating Pyrometer governing the Brown Automatic Fuel Supply Control Valve shown above.



Brown Automatic Fuel Supply Regulating Valve used with Brown Automatic Temperature Control.



"We could not afford to keep a man watching fuel control valves"

The Buck Stove & Range Company, St. Louis, Mo., were unable to get satisfactory results from hand regulation of temperature in their cast-iron-enameling furnaces. "We could not afford," says Mr. Anthony Jennings, Jr., Superintendent of their enameling department, "to keep one man doing nothing but watching the fuel control valves. Consequently, temperature was continually getting too high or too low."

A Brown Automatic Temperature Control was installed and the results summarized by Mr. Jennings are: "More pieces enameled—better work—25% less fuel—and no hand-control troubles—netting 374% return on the installed cost of the Brown equipment."

Address—The Brown Instrument Company, 4598 Wayne Avenue, Philadelphia, Pa., or any of our district offices at New York, Boston, Pittsburgh, Cleveland, Detroit, Chicago, Indianapolis, Birmingham, Tulsa, Houston, El Paso, Denver, Salt Lake City, Los Angeles, San Francisco and Montreal.

Brown Pyrometers

Most used in the world

666.05 Ceramics
EN

The Enamelist

A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY

THE LIBRARY OF THE
APR 17 1926
UNIVERSITY OF ILLINOIS

APRIL, NINETEEN-HUNDRED-TWENTY-SIX

Big Production and Perfect Enamelling

come only from Big Production of Perfectly Cleaned Stock

PANGBORN SAND-BLAST EQUIPMENT

Gives Both

PANGBORN
Type "LD-1" 8′ Automatic Rotary Table
Cleans fragile pieces without breakage.
Other types and sizes in 4′ and 6′ diam.

One of the largest enameling industries in this country tells us they operated their Pangborn Sand-Blast Equipment twenty-three hours a day continuously for five months, without a shut-down necessary.

They use Steel Abrasives and enamel white, grey and colors with perfect results.

There is a Pangborn Table, Barrel, Cabinet or Room of the right type and size to handle your work at lowest cost, whether you have much or little.

Send for Condensed Catalog and let us help you solve your enameling troubles.

Pangborn Sand-Blasts
and Dust Suppression Equipment

Pangborn Corporation Box 853 Hagerstown. Md.

The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

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R. A. WEAVER, EDITOR
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VOLUME 3 APRIL, 1926 NUMBER 6

Success is Not Attained in a Hurry

YOUNG men who are eager to succeed often fail to realize that the extra push necessary to take them over the steep hills cannot be found overnight.

The groundwork of a successful career is not laid in a day or a month. Banks, for instance, lend money, not to strangers, but to customers, to friends. Banks believe in reciprocity. A young man who has kept a fair sum in a savings account at a bank, and a proper balance in his checking account, and who has made a point of getting acquainted with the officers, will find himself some day able to ask a favor, with certain chance that it will be granted. The bank may have earned only a trifling sum on this young man's account, but his record of thrift and fairness will commend him.

Let a young man always pay his bills promptly, let him deal with each of his employers honestly and fairly, let him acknowledge favors, let him expose himself to those who are best able to help him, and he will find people not only willing, but eager, to give him a lift when he asks them for it.

But such priceless good-will cannot be commanded unless it has been earned. A sudden determination to settle down, to take life more seriously, is unconvincing to the experienced business man. He tells such applicants to come around again in a couple of years after their enthusiasm has had time to cool.

So, to the young men who entertain high hopes of preferment, I recommend an early demonstration of determination, honesty, fairness, courtesy and industry.

A little forethought beats a lot of afterthought.

Keep out of debt, keep your bank balance a few degrees above zero at all times, and save what money you can without sacrificing your personal appearance or the opportunity to see and be seen. If you do these things, and if you have your proper quota of brains, you'll find that tangible help is available when you need it.

Age is more sympathetic to ambitious youth than is realized. Everyone likes to help a young man, if, by his past record, he has shown he is worth helping.

William Feather

* * *

The Alumni of the New York State School of Clay-working and Ceramics at Alfred University have established a medal to be awarded annually to the person who shall be found to have made the most important contribution to the advance of Ceramic Art during the previous year.

This medal is in commemoration of twenty-five years of service of Dr. Charles Fergus Binns, who was made director of the above named school at its founding in 1900. The award is to be decided by a Board of Jurors, five in number, constituted as follows:

Dr. Charles F. Binns or a substitute incumbent to be appointed by the President of Alfred University.

One member to be appointed by the Trustees of the American Ceramic Society.

One member to be appointed by the National Terra Cotta Society.

One member to be appointed by the United States Potter's Association.

One member to be appointed by the Ceramic Guild of Alfred.

A nomination for the award must cite evidence of accomplishment and be accompanied by specific statements of fact. The evidence may consist of the actual production of a work of ceramic art; the discovery of a process or material; the investigation of a work of other time; or some specific contribution which in the opinion of the Jurors shall constitute a valid claim.

Nominations may be made at any time to the Board of Jurors in care of the School of Ceramics, Alfred, New York .

* * *

Mr. J. A. Underwood, of The Favorite Stove & Range Co., Piqua, Ohio, recently made a trip to the Pacific Coast.

* * *

R. L. Cawood, President of The Patterson Foundry & Machine Co., is at present in Los Angeles, Calif., accompanied by Mrs. Cawood, and daughter.

Some men slip backwards by standing still.

HENRY C. LUEBBERT, Vice-President of The Ferro Enameling Company, has made many valuable contributions to the improvement of the enameling industry. Although there are no accurate records as to the real originator of wet process cast iron enamels, we believe that Mr. Luebbert was the first one to use this process under regular production conditions.

H. C. Luebbert

Previous to the organization of The Ferro Enameling Company, he had charge of the development and manufacture of enamels for the largest stove company in the business. For the last 8 years of his association with that company, he was successfully producing a wet process enamel, enameling thousands, perhaps millions, of pounds of castings. One of the interesting features about this was that most of his work was done in white, which baffled many of the best brains in the enameling business.

Mr. Luebbert, very early in the game, became convinced that he should combine his long years of practical experience with some organization where technical training was also available, so his association with The Ferro Enameling Co. resulted in a combination of real practical experience with the proper technical training. His developments have been noteworthy, and inasmuch as he is still a very young man the industry can expect further contributions from him.

* * *

Mr. Ed Boblett, formerly of Vitreous Enameling Company, has sold his business interests in Indiana and is interested in finding an enameling plant which needs a good practical man as foreman or superintendent. Write him care of the ENAMELIST.

Never stop to worry until your day's work is done and then you won't.

Researches in Enameling

RECENTLY the Bureau of Standards at Washington has been conducting some very interesting studies on enamels. On the problem of The Effect of Typical Enamels on Colors Obtained with Various Oxides, they report:

Colored vitreous enamels obtained by use of the various coloring oxides, show considerable variation in shade due to the effect of the enamel composition upon the oxide. The study of this effect consisted in adding commercial oxides and oxides produced in the laboratory to representative sheet steel and cast iron lead and leadless enamels. Both opaque and transparent types were used. The work on sheet steel enamels has been completed, but the work on enamels for cast iron (wet and dry process) is still in progress. All stains used in this investigation were added with the mill batch, after being passed previously through a 200-mesh sieve, and washed to remove any soluble material.

In general, the results thus far obtained show: (a) Lead in enamels produces a very dark shade; (b) the presence of opacifiers tends to reduce brilliancy; (c) the lead-free glassy enamels give the most satisfactory results as regards duplication of color and brilliancy.

Sheet Steel Enamels for Kitchen Ware—In this investigation a study was made of the relation between enamel composition and such properties of the enamel as expansion, strength, and acid resistance, as well as the effect of the relative coefficients of expansion of the ground and cover coats on resistance of the enameled ware to impact and thermal shock. The work was carried out with 14 ground coats and white cover enamels, applied to 600 8-in. dinner plates. The following results were obtained:

(a) The replacement of boric oxide by sodium oxide in the enamels increased the coefficient of expansion. Fish-scaling decreased with increase of expansion as the result of this replacement.

(b) The compressive strength of the ground coats appeared to decrease with replacement of boric oxide by sodium oxide, although the reverse conditions occurred in the case of cover enamels.

Painting the town red generally requires interior decorations.

(c) Impact on the part of enameled ware not free to deflect, such as curved corners, gives a measure of the toughness of the enamel as applied on the steel. The resistance of the enamels on corners, to impact, is apparently a function of the inherent strength of the enamel rather than its "fit" on the ware.

(d) For greatest resistance to thermal shock, the ware should be coated with a ground coat having a coefficient of expansion equal to, or preferably greater than, that for the cover enamel.

(e) Acid resistance, while dependent on the enamel composition, is not affected in the same way for all enamels. For these particular cover enamels, resistance to acids decreased with replacements of boric oxide by sodium oxide.

Warpage of Sheet Iron and Steel—The effect upon warpage of different methods of cleaning the metal, duration of firing periods, scaling practices, gages of metal, and types of enamels was not definitely known. In the studies made at the bureau, test pieces 16 by 16 in., representing several commercial enameling irons and steels, were used and compared. Warpage was determined by obtaining the areas on 5 evenly spaced vertical planes, parallel to one edge of the test piece, included between the horizontal base plane and the contour of the test piece resting thereon. The average of the 5 areas in sq. cm. was used to express numerically the degree of warpage. The conclusions were: (a) A wide divergence between the expansivities of the enamel and the metal base induces warpage. (b) There seems to be less tendency for the scaled metal to warp than for that cleaned chemically. (c) Thin metal is more sensitive to the factors affecting warpage than thicker metal. (d) Sudden, irregular cooling induces warpage. (e) Tendency to warpage is reduced by properly supporting the ware during firing and cooling.

Investigation of Gray Ground Coats for Sheet Iron and Steel—Present commercial ground coats are dark in color, due to the presence of cobalt and other metallic oxides which seem to be essential in producing a product with good adhesion to the steel. It is practically impossible to cover this dark colored ground coat satisfactorily with one coat of white enamel, and where the manufacturer of inexpensive enameled stove parts,

If a woman weighs more it's safer to let her have her own way.

table tops, and similar lines of ware for which there is a large demand, requires a low production cost, it must be accomplished by the use of a gray or white ground coat which can be covered with a single coat of white enamel.

Wet Process Enamels for Cast Iron—The conclusions from this work are based on the results obtained in the application of 132 enamels to approximately 900 castings in this laboratory. About 600 trials were used in the study of white enamels with the use of a ground coat, and 150 each for colored and white single-coat enamels. In addition, some of our laboratory results on the most promising enamels were checked at a commercial plant. In this part of the work, conducted under regular factory conditions, 15 of the enamels were prepared in full-size commercial batches and applied to 325 stove castings, such as oven and broiler doors, pouch-feed frames, fire door panels, main fronts, oven-burner plates, flue doors, and brackets. Although colored enamels of single-coat type are easily produced, the result of the work would indicate that it is possible to produce white enamels over a ground coat which are more satisfactory in texture and opacity than enamels applied directly to the iron.—*Chem. and Met.*

* * *

As a result of the demand that has been developing during the past few years, courses in plumbing and welding, it is announced, are receiving special attention in the plans for the Summer Session this year at the Carnegie Institute of Technology in Pittsburgh. According to the plans, the College of Industries will give six weeks' courses from June 28 to August 6 in plumbing and oxy-acetylene welding under the direction of the Department of Plumbing, Heating and Ventilating.

Although the courses in these subjects are outlined primarily for the benefit of teachers and supervisors of industrial training, the announcement points out, the work is designed to have a special appeal, also, to undergraduates and others who feel a need for more technical training.

In addition, the College of Industries will give six weeks' courses in Woodworking, Cabinetmaking, Sheet Metal Work, Machine Shop, Electricity, Radio, and Drawing. The College of Engineering will give various courses in Chemistry, Physics, Mechanics, Surveying, and Coal Mining. Other departments on the campus are offering courses in English, History, Economics, Commercial Law, Mathematics, Psychology and Education, and for teachers and supervisors in Music and Art.

The fellow who thinks he's hot stuff frequently jumps from the frying pan into the fire.

A MAN who has recently come before the notice of the enameling industry is Mr. Wm. V. Knowles, of The Titanium Alloy Mfg. Co. Mr. Knowles was largely responsible for the organization of the Chicago Enamelers' Club, and was also responsible in a good measure for the success of the recent A. Cer. S. Convention in Atlanta.

Wm. V. Knowles

Recently he was made Manager of the Service Department of the Titanium Alloys Co., with offices in Cleveland, Ohio. He will be Bob Landrum's right hand man, and Bob says he doesn't believe he could find anyone in the industry who would make him a better man.

Mr. Knowles has been with his present company for fifteen years, and for the past ten years was Manager of the Chicago office. He's had a great deal of experience in metallurgy, all of which is now available to enamelers.

* * *

Our Editor was recently re-elected President of the Northern Division of the Delta Tau Delta fraternity.

* * *

The friends of Mr. Howard W. Dunbar, of the Norton Co., will be pleased to hear of his marriage in New York, on February 26th, to Miss Eleanor Elaine Scott.

* * *

We were indeed very sorry to hear of the recent death of Mr. John Early, of the Early Foundry Co., Dickson City, Pa.

* * *

Mr. and Mrs. Adam Karr of the Karr Range Company of Belleville Illinois have just left for an extended trip to Cuba and South America. Our readers will remember that Mr. and Mrs. Karr toured Europe last winter.

"You look like a runner," quoth the devil to the lobster.

History of Porcelain Enameling Furnaces in this Country

By R. A. Weaver

The history of enameling furnaces is naturally correlated with the history of the porcelain enameling business. Originally the enamelers were strongly in favor of the muffle type of furnace, which is a type used almost exclusively in the "old country," where our early enamelers received their original training. The muffle type of furnace is a logical development from the ordinary cook stove, which it follows quite closely in design.

In the pioneer days of the enameling furnace, the clay muffle was the only muffle obtainable and had certain limitations. Production, as evident by the number of loads per hour, was limited by the amount of heat which a clay muffle would transmit. If the furnace was forced to any extent, the supporting brick would give way and the muffle would collapse.

It is impossible to discuss the question of enameling furnaces without discussing at the same time, the question of projecting forks for carrying enameled pieces in and out of the furnace. In the early days, the common tilting fork was most popular. This is simply a two-wheel carriage with a long handle, which counterbalances the load on the two prongs which project into the furnace.

Occasionally some inventive genius would work out a fork with a perpendicular lift, perhaps using air for power, sometimes electricity, and once in a while using a hydraulic lift.

Early in the game two forks were tried with the idea of saving the time which was commonly lost in unloading and loading the single fork outside of the furnace. The idea, of course, was to have one load burning while the other fork was being unloaded and reloaded. The intention was good but the clay muffles could not transmit enough heat to take care of this increased production. Consequently the muffle temperature would get lower and lower, until finally the work had to be held back until the enameling temperature was restored. As much time was lost in this way as was gained by the use of the double fork, so that idea was abandoned.

One "crab" can set the whole office crawling.

Most of the original furnaces were coal fired, but with the increase of knowledge on the subject, the use of oil became very popular. Occasionally natural gas was used, when available, and a few furnaces were operated on artificial gas. In later years electric furnaces have been operated with considerable success.

In very recent years the enameling industry has perfected several new materials from which muffles can be made to withstand very high temperatures without disintegration, and at the same time transmit the heat from the combustion chamber to the interior of the muffle many times faster than with the old clay muffle.

Of course, these new muffles were higher in cost, and it took some pioneering to get them installed, but after a few were in operation it was easily seen that they were worth the additional money, and now clay muffles in the stove industry, at least, are the exception rather than the rule.

Due to the faster heat transmission by the use of better muffles, the more enterprising enamelers have found that they could use a double fork without reducing the temperature in their muffles. It was not long before many of the furnaces were equipped with two forks, one of which would project the work into the furnace while the other was being unloaded or reloaded. This would ordinarily increase the number of loads per hour about 50 per cent without greatly increasing the amount of fuel used.

This encouraged the enameler to find further means of getting more work out of the furnaces, which was done by double decking, and in some cases triple decking, the charge of cast iron. Here again a greatly increased production was secured.

In sheet metal work, hanging racks have been developed so that work can be hung in the furnace rather than laid flat. Naturally, a great deal more work can be hung in a furnace than can be laid on points, resulting in practically double the production.

With the continued demand for increased production of a high quality product, it is quite probable that many automatically controlled enameling furnaces will be placed in operation in the future. —*Reprinted from "Fuels and Furnaces"*

When a public official begins to think he's a big gun he should be fired.

Enameling Business Going Strong

OUR monthly analysis of enameling business indicates that the industry already practically equals the highest point of 1925. In November 86% of the furnaces were being used. In March 85% of them were in operation. Every indication points to an unusually busy year for the entire enameling industry. Here are some of the comments received:

"Demand equals capacity."

"Very good outlook for future."

"Working three 8-hour shifts. Busy as can be. Three months' business booked ahead."

"Going strong."

"Business picking up."

"Business improving."

"Running 24 hours per day."

"Running 100%."

"Prospects good."

"Business *very* good."

"Business outlook first-class," from a Canadian firm.

"Business fair—prices entirely too low. Competition ruinous," from a kitchenware enameling firm.

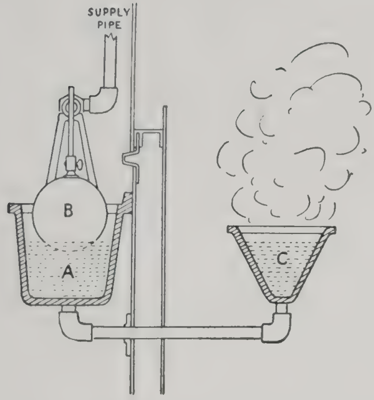
"Twenty-four hour day, 6 days a week. Doing all the work we can shove through two furnaces."

General conditions also point to a great improvement in trade. Demand and operations are better in the iron and steel industry. The building industry shows a 25% gain over February of last year. The automobile industry also shows a gain, and the settlement of the anthracite coal strike will have a definite favorable bearing on business.

J. W. Hill, Financial Editor, Iron Trade Review writes: "What are the strong points in the present situation? Chief among them are good buying power, and an easy credit situation. Conservatism has ruled, and that is the best insurance against a severe depression in the industry."

Telephone girls are often connected with the best families.

New Furnace Device



THE Bridge and Beach Co., of St. Louis, one of the best known of the older stove companies, have recently issued a folder giving complete information about their line of furnaces. We were quite interested in the special humidifier which they supply with their furnace. They state that evaporation depends entirely on the area of the water, the only means for regulating the percent of moisture being to regulate the water surface. They do this by an adjustment of the float ball, illustrated in the sketch. They can maintain any desired level automatically and the user of the furnace doesn't have the privilege of forgetting to fill the water pan. It is interesting to note that the V shaped evaporating pan which they use is finished in porcelain enamel.

* * *

Sign Enameling Plant For Rent

In one of the best manufacturing towns in Ohio there is an enameling plant for rent. It consists of a building 60 x 130 with a good basement. Their building is built for enameling and was completed during 1925. It represents an investment of $40,000.00 and there is additional ground for expansion. The people running this plant will lease to a responsible person for five years, with privilege of purchase. They will also guarantee approximately $25,000 worth of porcelain enameling per year and will pay the market price for the work. If any enameler is interested in this proposition, we recommend that they write to the Editor of the Enamelist at once.

Secrets shouldn't worry us as they're nothing to speak of.

One of the reasons for the great success of the St. Louis Enamelers Club has been the fine co-operation they have received from the Belleville enamelers. Naturally, the Belleville men use their machines in driving back and forth and occasionally it is necessary to transform a Ford Coupe into a truck in order to take care of the crowd. In the picture illustrated above, you will, no doubt, recognize some of the old standbys. The man at the left holding up the machine is our friend Emil Lueppke. We are not sure, but it looks like Gus Oesterle astride the hood. The fine looking fellow at the right of the machine (not a cop) must be McFadon. We can't recognize the fellows on the inside but we are sure that Joe Karr and John Hartman are some place in the picture.

* * *

We are indebted to the General Electric Co., for illustration on cover of this **ENAMELIST**, which our readers will be interested in knowing is the Cleveland harbor.

* * *

The Chemical Exposition will be held in Cleveland during the week of May 10th to 15th, and if any of our friends are visiting this show, we will be mighty pleased to have them come in to see us.

* * *

The Republic Metalware Co., Buffalo, C. W. Wells, President, is making additions to their plant, and adding new enameling equipment.

* * *

The Beach Foundry, Limited, Ottawa, are installing a second electric enameling furnace.

Persia is famous for its rugs, most of which are made in America

REG. U.S. PAT. OFF.

R&H A1

CERAMIC CHEMICALS
MINERALS, OXIDES
and
SERVICE

THEIR reputation for *quality* is guarded by exhaustive technical inspections. The experience and knowledge of R & H is always available to insure your full satisfaction.

The
ROESSLER & HASSLACHER CHEMICAL CO
709 SIXTH AVENUE, NEW YORK

Chicago
Boston
New Orleans
Cleveland
Trenton
Pittsburg
Baltimore
San Francisco
Philadelphia
Kansas City

The size of a quarrel has nothing to do with the size of the cause of it.

St. Louis Holds Annual Meeting

The Annual Meeting of the St. Louis Enamelers' Club was held at the American Annex Hotel in St. Louis on March 30th. Twenty-nine members attended. Mr. Bob Landrum of the Titanium Alloys Mfg. Co. was the principal speaker of the evening, speaking on "Enameling, Then and Now."

Mr. Landrum stated that the greatest difference between enameling then (in 1904) and now is that formerly the enameler stood utterly alone. Today he is a member of a real brotherhood. Also, that the Board of Trustees of the American Ceramic Society had the following to say of the Club: "In creating this Enamelers' Club, you have started something that will have far-reaching results. You have put your fingers on a means of overcoming the only bad effect of our ever increasing size. The idea is so good that it will be used by all of the Divisions of the Society."

The following new officers were elected: Mr. F. J. Stretch, of the Koken Companies Inc., President, Mr. Frank Kehl, Brilliant Sign Company, Vice-Presieent, Miss Marie Regnier, Manager of Silica Sign Company, Secretary-Treasurer.

The retiring President, Mr. C. S. Houpt, addressed the Club.

An interesting program had been arranged, including solos by Mr. Roy Jaeger, and, Mr. George Branhoff, of the American Thermometer Company. Mr. Albert Renje, nephew of the Secretary-Treasurer gave a very fine violin solo.

Four new applications for membership were received, making total membership forty-eight.

* * *

Celite Products Company announces the removal of its San Francisco Office from the Monadnock Building to 140 Spear Street, San Francisco. This change is made to provide larger quarters and better operating facilities.

* * *

Bruce Products Corporation, who recently purchased their plant in Howell, Michigan, are now in full operation at the new location. Mr. L. M. Terry has been appointed factory manager.

A touch of beauty makes the whole world sin.

As Sound As It Can Be Made

Control of every process from the reduction of the iron ore to the final preparation of the sheet for the enameler, is why we know Toncan Metal to be as free from defects as it can be made.

Every precaution known to modern metallurgy is employed in producing a metal that is ideal for the enameler. That we have attained our purpose is being demonstrated by the unparalleled increase in the use of Toncan Metal for all forms of enameling.

We recommend Toncan as having no superior as an enameling base. Tens of thousands of tons in use in enameled parts today is proof that enamelers know it to be just as recommended.

TONCAN METAL

United Alloy Steel Corporation, Canton, O.

New York
Syracuse
Cleveland
Philadelphia
Pittsburgh
Chicago
Detroit
San Francisco
Indianapolis
Portland

TONCAN ENAMELING SHEETS

Every married man is convinced he would have been rich if he had remained a bachelor.

Somebody Figured Wrong

Apparently the enameling business needs a uniform cost system, because no two enameling companies seem to come close in figuring prices on business offered to them.

For instance, the United States Forest Service recently requested price on signs, sending out identical specifications to a number of different sign enameling plants.

Note the wide variation in the quotations made to this customer.

The highest bidder was $6467.78 and the lowest bidder was $2471.26. The other bidders were as follows:

$2511.47—$2760.03—$2977.26—$4239.79.

You will observe that the highest bid was 100% higher than the lowest bid. Certainly somebody figured wrong on this order.

* * *

THE PRICE CUTTER

Tell me not in smiling numbers,
Selling costs are what they seem,
And the man who cuts for orders
Gets the lion's share of cream.
If you strive to build a business
Do not be a human sieve—
Letting leak your needed profit,
Trusting luck will let you live.
Lives of dead ones all remind us
What it means to sell on guess;
Their departure makes us keener
To sell right and not "for less."
For no trade can long be loyal
To a man who's all regrets,
Can't deliver—who's just living
On the interest of his debts.

—*Ryerson Journal.*

* * *

Two new names have been added to the list of stove enameling plants, being the Globe Stove & Range Co., of Kokomo, Ind., and the Kalamazoo Stove Co. of Kalamazoo, Mich. The Globe plant has just been completed, while the installation at Kalamazoo is still in process. Both these contracts were awarded to The Ferro Enamel Supply Co.

The people who deserve no help are always seeking and getting it.

Saved 15 H. P. Per Nozzle

Flow-meter tests made by our Staff Engineer in the Pangborn pressure type sandblast of an Indiana stove foundry showed the following air-saving accomplished by the use of Flint Shot:

Abrasive	Orifice	Pressure	Flow-Meter Reading	Actual Air Flow Cu. Ft. per min.	Actual Brake HP
Steel Shot	3/8 in.	85 lb.	26	193.90	63.90
Flint Shot	3/8 in.	85 lb.	20	149.00	48.90
Saved by Flint Shot	-	-	-	44.90	15.00

The flow-meter was inserted in the air line just outside of the machine, the readings, therefore, representing actual air consumed in propelling the two types of abrasive.

Not only does Flint Shot consume less air at a given pressure; but it requires less pressure, because it is light and elastic, rather than heavy and "dead."

Flint Shot does its best work at 60 lbs. pressure or less, on gray iron or malleable castings, while 80 to 90 lbs. pressure is required to propel the heavy steel abrasives.

That Flint Shot gives the cleaned surfaces a velvety finish, ideal for enameling, instead of a pitted "greasy surface," is already too well known to enamelists to need extended discussion here.

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

Flee From Fiery Furnace And Fierce Fishscale!

YOU poor down-trodden enamelers, spend $5.00 and buy Richard Halliburton's "The Royal Road to Romance." We heard him lecture, and promptly bought his book. His experiences make the ordinary business world seem pretty drab. He first climbs the Matterhorn, then visits Andora, the world's smallest, highest and quaintest republic. Next the Alhambra, the most romantic monument in Spain. Soon he is arrested for taking innocent snapshots of Gibraltar, then the Pyramids, the Taj Mahal, the Vale of Kashmir, across the Malay Peninsula during the Monsoon period; on to Angkor, the greatest mystery of history; too many exciting and romantic incidents to mention. Don't read this book if you have any romance or hankering for travel in your system. Money back if you don't like it.

Percival Wren, who wrote Beau Geste, has another almost as good in "The Wages of Virtue." If you are interested in mystery stories, we recommend this highly.

If you are interested in worthwhile books, read Merejkowski's, "The Romance of Leonardo da Vinci." You probably didn't know that Leonardo da Vinci not only painted "The Last Supper" and "Mona Lisa," but also built the first aeroplane. He was not only a painter but a sculptor, an architect, an engineer, a poet and a mathematician. Be sure to read this. Better than a novel.

* * *

Mr. E. A. Eigenbrot, formerly with the Buck's Stove & Range Co. of St. Louis, is now with the J. B. Ford Co., Railway Exchange Building, St. Louis.

* * *

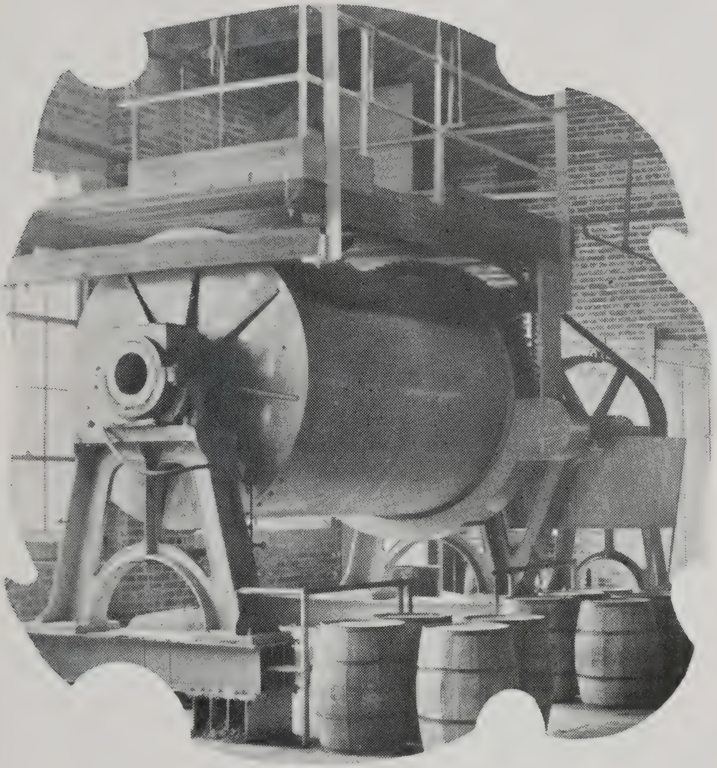
Platinum is the only metal upon which no single acid has an effect. The only acids which will touch it are nitric and hydrochloric acids when mixed together. Platinum wire has been drawn so fine that a mile of it would not weigh over a gram, while seven ounces of it would extend from New York to London.

* * *

Mr. Frank Roberts, who has been with the Porcelain Enameling & Mfg. Co. of Baltimore, has left that company, and is established by himself in another line of business.

Fame is chiefly a matter of dying at the right moment.

Patterson Mills at Newark, N. J.



The Patterson Foundry & Machine Co.
Richard L. Cawood, President
East Liverpool, Ohio

Fat people wishing to reduce should not indulge in revenge, because it's sweet.

An Enameling Town

A DELIGHTFUL place to live! Such a remark is often heard from persons who had visited the industrial village of Kohler, Wisconsin. Located in the heart of a rural district along the picturesque banks of the Sheboygan River, this community has often been pointed out as a model village, delighting everyone who appreciates good homes and wholesome community life.

Group of Kohler Village homes

The development of the Kohler Village has occurred within the past twelve years. When the Kohler Company, manufacturers of enameled bath-room fixtures moved its factory from Sheboygan to Kohler, a point four miles west of that city, but a few workmen from the plant lived there. Most of the workers lived in the surrounding community, going to and from work by means of an electric interurban.

The idea was conceived of building up a permanent community nearby the factory. The natural beauty of the surrounding country offered an unusual opportunity to make the Kohler village as unique as possible. Interest in the project grew to such an extent that expert town planners and architects were called in for a consultation. Many of the best industrial cities of America and Europe were visited. The results of these investigations brought forth certain precepts regarding the plan of such a community village.

The village, firstly, was to be a model of its kind, modern in every respect, its homes simple yet tasteful. Special emphasis was to be given to beauty and the entire village to be laid out in a manner so as to carry out the natural beauty afforded by the topography of the surrounding country. The industrial and residential sections were to be separate and kept so. The factory was never to dominate the town. The village of Kohler was to be American in spirit and entirely self-governing.

Soon after the plans of the village were completed, presented to the people and immediately accepted. Work on the village began immediately, streets were laid out and various groups of dwellings were built.

Most of the homes at Kohler were built by the Kohler Improvement Company, a corporation organized for service, but not for profit. The houses built by this organization were sold to the workers at Kohler at cost and the purchase financed, if desired, through the Kohler Building and Loan Associa-

A woman's word, a bundle of water.

True Economy

THE essence of true economy is smart expenditure. Thus, when the cost of doing without, exceeds the cost of ownership—to do without a thing is poor economy.

Therefore, the man who is using points and racks made of ordinary iron, instead of Bobloy, is losing money. Bobloy is made by the Hoskins Manufacturing Company, for the Ferro Enamel Supply Company, and represents all we have learned in 19 years experience with heat resistant alloys. It necessarily must cost more than ordinary iron, because of its high content of nickel and chromium. But because of the nickel and chromiun, it lasts many times longer, and is cheaper in the long run.

Bobloy is made in lighter sections than iron can be, and this makes your cold metal content less. This saves fuel for you. It does not warp nor scale, to any extent, which results in better and cleaner enameled ware. Thus, you save money on rejections and "seconds".

Obviously it is true economy to install Bobloy racks and points in your furnaces.

Hoskins Manufacturing Company

4430 Lawton Avenue Detroit, Mich.

BOSTON
Park Square Bldg.

NEW YORK
Grand Central Term.

CLEVELAND
Leader-News Bldg.

CHICAGO
Otis Bldg.

SAN FRANCISCO
1151 Market St.

Hoskins Products

ELECTRIC FURNACES · HEAT RESISTANT ALLOYS · ELECTRICAL RESISTOR ALLOYS · PYROMETERS

IT was not very long ago that all enameling production was dependent upon inherited formulas and jealously guarded secrets.

Improvements were finally secured only after countless experiments. An undetected variation in raw materials usually proved a genuine catastrophy, finally solved by mere chance.

DON'T DEPEND ON CHA

Buy

Today Ferro produces millions of pounds of enamel in smelters pyrometrically controlled — using raw materials rigorously inspected and analyzed.

The Ferro Organization includes a complete research laboratory, four graduate ceramic engineers, seven practical enamelers and an ambition to make the finest enamels.

E—DEPEND ON FERRO

n Bob

tion. People of moderate means, are therefore, given an opportunity to own their own home. The streets were immediately paved and illuminated with ornamental lighting fixtures. The most modern conveniences, public water and sewer system, electricity, telephone, were made immediately available.

A Kohler Co. office building

The natural beauty of the topography of the surrounding country gave the town planners an opportunity to make ample provision for parks and playgrounds.

One of the most interesting and beautiful parks in the village is known as Ravine Park which consists of a wooded ravine lying almost in the heart of the village. Many paths were constructed through the ravine and rustic bridges built over the brook that flows through the park.

The Kohler Nature Theatre is a portion of Ravine Park consisting of that unwooded section into which Ravine Park terminates. Its natural topography almost makes it a natural amphitheatre with the result that very little construction outside of some grading and planting were necessary to complete it. It makes a delightful open-air meeting place. Evening band concerts are held weekly during the summer months and most of the outdoor activities are held here. One of the most interesting activities held at Kohler each year is the Kohler Festival and Field Day. The Nature Theatre was dedicated in the autumn of 1919 with a concert by Sousa's band. This nationally known musical organization again gave a concert in the Kohler Nature Theatre in July, 1925.

American Club, Kohler Village

The policy of the village government to beautify the village and to keep it well maintained is a sentiment of the people. In the summer there is a profusion of flowers. Trees, shrubs, and vines are used to best advantage and greatly enhance the quaint architectural beauty of the dwellings.

It is the imperfections of nature that is the origin of Art.

Hommel for quality, uniformity and service. H

Oxides for cast iron and steel, all shades in unequalled strength—Graining colors. O

Manufacture also Cadmium Sulphide in superior quality. Always the same. M

Manganese oxide, Chromegreen oxide, Cobalt oxide and all other chemicals. M

Enamel Feldspar. Ask for analysis and learn of its merits. E

Lump and powered clay. L

Sole Agents for
McDANEL PORCELAIN PRODUCTS
for
PEBBLE MILL
GRINDING BALLS—LINING BRICKS

The O. Hommel Co.

209-13 Fourth Avenue Pittsburgh, Pa.

Factory: Carnegie, Pa. N. Y. Office: 19 West 34th Street

The industrial grounds are similarly treated and the factory yard has stretches of trees and shrubs extended along it. Vines are effectively used on the factory building, and such parts of the plant which are of necessity lacking in beauty are screened in from public gaze by vine covered walls and hedges.

For the single men associated with this institution an attractive building called The American Club has been constructed. The purpose of this building is to provide quarters for the single man who might otherwise have to seek lodging in cheap boarding houses.

The American Club faces High Street and is directly opposite the large general office building of the Kohler Co. The building was designed to carry out the characteristic artistic quaintness of the village. It provides quarters for 250 men, and sufficient room in the building is given over for recreational purposes. The Club has several bowling alleys, a billiard room, reading room, and dining hall. The men living at the American Club live in harmonious, constructive surroundings.

* * *

Real Enameling Opportunity Wanted—young man graduate of Ohio State University Engineering Department, with splendid training on cast iron and sheet steel is anxious to secure position as foreman or superintendent in enameling shop doing stove, refrigerator, copper, silver or ornamental enameling. Salary required, two hundred and fifty dollars per month. Box E, Enamelist.

* * *

For the fifth consecutive year, the public utility industry of the United States has led all other industries in the amount of new money obtained from sale of securities to employees, customers and the general public, says the Ohio Committee on Public Utility Information.

Total amount of new public utility financing in 1925 was $1,496,000,000 or an increase of $171,000,000, according to H. C. Abell, president of American Gas association.

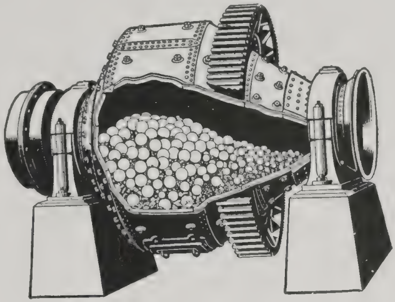
The 1925 figure is not only a new record, but represents more than three times as much financing as took place in 1921, when the utility industry sold $492,000,000 of securities.

During the period 1921 to 1925, inclusive, the public service companies obtained a grand total of $4,927,000,000 of new money for their extension and betterment programs, a record which Mr. Abell believes is without a parallel in the history of corporate financing in America.

* * *

The Massillon Refractories has just completed a large shipment of ALUMITE Refractories for Enamel Burning and Smelting Furnaces to Australia. They stated that the Enamel Business in Australia just at this time, is very good.

Pride also goeth with a fall.



Grinding to
98% passing 300 mesh

Feldspar Silica Clay

This is no unusual record for the Hardinge System of grinding, which is continuous in operation, delivering a uniformly fine product.

HARDINGE COMPANY
YORK, PENNSYLVANIA

WORKS AND
MAIN OFFICE
YORK, PENNA.

BRANCH OFFICES
NEW YORK, N. Y., 120 BROADWAY
SALT LAKE CITY, UTAH: NEWHOUSE BUILDING

CABLE
ADDRESS
HARDINGMIL
NEW YORK"

You can generally see some calves on display at any horse show.

Porcelain Enamel Digest

The following article appeared recently in a Cleveland paper, which will be interesting to our readers. The title of this article was, "First Jobs of Big Men," and read as follows:

One of the leading manufacturers and business men of Cleveland is where he is today as the result of devoting a large part of his business career to enameling.

He got his first job at the age of 22, after completing a college course in chemistry as chemist and enameler for the Columbian Enameling & Stamping Company. But three years later he gave up this post to take that of assistant professor of chemistry at the University of Kansas, where he stayed for another three years.

Then he went to Canandaigua, N. Y., as chemical engineer for the Lisk Manufacturing Company, later to spend three years as consulting engineer for the Michigan Enameling Works, of Kalamazoo, and the Michigan General Stamping Company of Canton, Ohio.

His next connection was with Harshaw, Fuller & Goodwin Company of Cleveland, as engineer and manager of the service department.

Seven years later he became the vice-president of the Vitreous Enameling Company and the Vitreous Steel Products Company, of Cleveland.

His name is Robert D. Landrum.

Mr. Landrum is now with the Titanium Alloys Co., in Cleveland.

* * *

The officers for the Western Central Association of Stove Manufacturers are J. A. Underwood, President, W. A. Smith, Vice-President, L. H. Bootch, Treasurer and Allen W. Williams, Secretary.

* * *

An article in a Southern newspaper states that the Agricola Furnace Company, of Gadsden, Ala. is just completing one of the largest plants in the country for the manufacture of furnaces for heating houses. They will turn out 20,000 furnaces annually, and it is said that their production for the next five years has already been sold.

Don't get the blues about the Reds—they're all yellow.

Send for your copy

New Booklet

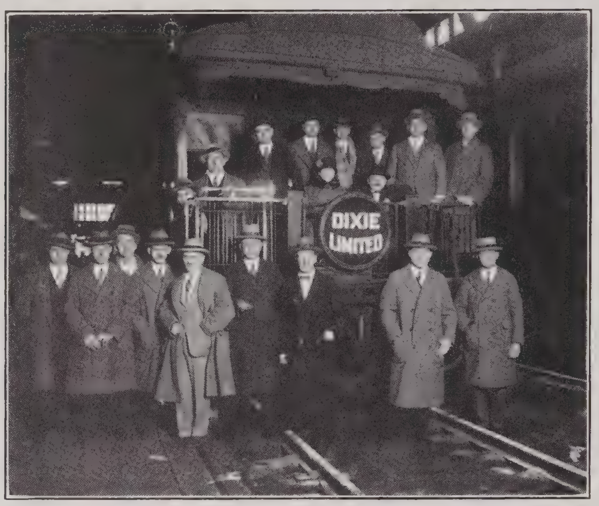
Illustrating Many New Styles of Burning Equipment

Hanging Racks, Double and Triple Deckers, Blades, Tripods, Loops, Points, Etc.

"Buy from Bob"

The Ferro Enamel Supply Company
Cleveland, Ohio

Short love matches generally burn somebody's fingers.



Group of enamelers from Chicago district who attended the Ceramic Convention in Atlanta. We understand there were seventy-five members who went on this train, but that many of them did not arrive at the depot in time to be included in the picture.

* * *

The enameling industry is always interested in the cost of burning ware in the various types of furnaces.

We find that one large company, doing cast iron enameling of stove parts in an electric furnace, have been able to do three coat work at a total cost for electricity of $.0059 per pound of finished castings. This cost was figured on a run of approximately 100,000 lbs., using electricity at approximately 1½c per KW.

* * *

Mr. B. W. Lattin, formerly with the D. J. Ryan Foundry Co., is now with the Moore Bros. Co. of Joliet, Ill.

* * *

Koken Co., St. Louis, large manufacturers of enameled barber chairs, etc., is making plans for an additional plant in St. Louis, to consist of 14 buildings.

Why watch the clock? It may be going but it can't get away.

IF you want to use a substitute for tin oxide, use the best and cheapest substitute.

M and T

SODIUM ANTIMONATE

It is technically pure and contains no kaolin or other fillers. Therefore, it gives your enamels good working properties and fine color and gloss.

In wet coat enamels for steel and iron, one half the tin oxide can be replaced by using 1½ pounds of M and T Sodium Antimonate in place of one pound of tin oxide.

Write for details and prices.

Metal & Thermit Corporation

Ceramic Department
HOMER F. STALEY, Mgr.

120 Broadway
NEW YORK

ENAMELING IN THE SOUTH

Emerson P. Post

Mr. Emerson P. Poste, superintendent of enamels at the Chattanooga Stamping & Enameling Co., gives in a current issue of The Ceramist, a very interesting article on the enameling industry in the South. "The eyes of the country are on the South, as a scene of a phenomenal industrial development," states Mr. Poste. "Various ceramic lines are prominent among the industrial activities, and not leas of these is the manufacture of enameled ware. Those engaged in the enameling business in other parts of the country will be interested in knowing more about the situation in the general area south and east of the Baltimore, Wheeling and St. Louis districts."

"The largest manufacturer of enameled iron in the South, and in the world," continues Mr. Poste, "is The Standard Sanitary Mfg. Co. Though it maintains general offices at Pittsqurgh, the most extensive of its 10 plants is in Louisville, Ky. Founded in 1865, this plant now consists of about 50 buildings,with 7 individual enameling shops. The enameling equipment includes 8 smelters, 15 crushing and grinding mills and 75 furnaces of various types.

Theodore E. Mueller is manager of the Louisville works, and assistant general manager of all factories. H. M. Reed is general manager of all the factories.

At Charleston, W. Va. we have The Fletcher Enamel Co., which was founded some years ago by Mr. U. G. and Mr. Solon Fletcher. This plant consists of 10 furnaces, and is confined to the manufacture of cooking utensils. Mr. U. G. Fletcher formerly was with the Bellaire Enamel Co. of Bellaire, Ohio.

At Nashville there is The Tennessee Enamel & Mfg. Co., the Allen Mfg. Co., and the American Enamel Works, Mr. M. H. Wright is President of The Tennessee Enamel & Mfg. Co., which does a variety of jobbing work, and Mr. D. B. Noland is in charge of the enameling at the Allen Mfg. Co., where only stove work is being done. Mr. M. S. Flanigan is general manager of the American works, where job enameling of stove parts, etc., is done.

At Chattanooga there is the Crane Enamelware Co., formerly the Cahill Iron Works. The Cahill Iron Works was originally a gray iron foundry, specializing in frames, grates, etc., but later began the manufacture of enameled sanitary ware. A comparatively short time ago it was absorbed by the Crane Co., of Chicago, thereby becoming known as the Crane Enamelware Co.

Paying court to a girl is much harder than paying the court's alimony.

Are the little devils of high temperature service eating up your fire brick too quickly?

Ashland fire brick is mixed, tempered and burned to successfully combat disintegration, slag penetration, spalling and abrasion.

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND, KENTUCKY.

Sales and Service Offices

New York
Detroit
Chicago
Indianapolis
Cleveland
Havana, Cuba

There is also the Chattanooga Enameling & Stamping Co., at Chattanooga. In 1913, William Lipphardt, former President of The Enterprise Enamel Co., Bellaire, Ohio, with his two sons and W. R. Samuel of the Enterprise Co. organized this Company, for the manufacture of gas heaters. This device did not prove successful, so specialty enameling was taken up. In 1916 D. M. Patten became President. The line of products was expanded, an important addition being linings for mechanical refrigerators, an enameled part first produced at this plant. At present they have 4 smelters, 7 mills, complete stamping and welding equipment, two oil furnaces and two electric furnaces. D. M. Patten is President, Z. C. Patten, Vice-President, J. E. Abshire, Secy.-Treas., W. R. Samuel, Sales Mgr., F. W. Holbrook, Prod. Mgr., and E. P. Poste, Chemical Engineer.

Another Chattanooga plant is the Tennessee Furniture Corporation. For the past 2½ years this company has operated its own enameling plant, getting out a line of enameled refrigerators, known as the Odorless Refrigerator. G. C. Raoul is President of the Furniture corporation, and D. W. Boddy is in charge of the enameling plant."

* * *

At the annual meeting of The Moore Enameling and Manufacturing Company, of West Lafayette, Ohio, the following officers were elected:

W. B. Moore, President and General Manager.
H. A. Sicker, First Vice-President and Treasurer.
Wm. B. Rodgers, Jr., Second Vice President.
R. W. Taylor, Secretary and Assistant Treasurer.

* * *

POSITION WANTED. By enameler with 15 years' experience on sheet steel and cast iron. Can take charge plant. Box "J" ENAMELIST.

* * *

OPPORTUNITY. If any of our readers would be interested in going into partnership in a small enameling shop with an enameler of long experience and good qualifications, please write box "P" ENAMELIST.

* * *

EXCELLENT OPPORTUNITY. For dry process enameler. Must be good production man, know chemistry of enamels, and be able to handle men. Write qualifications to Box "A" ENAMELIST.

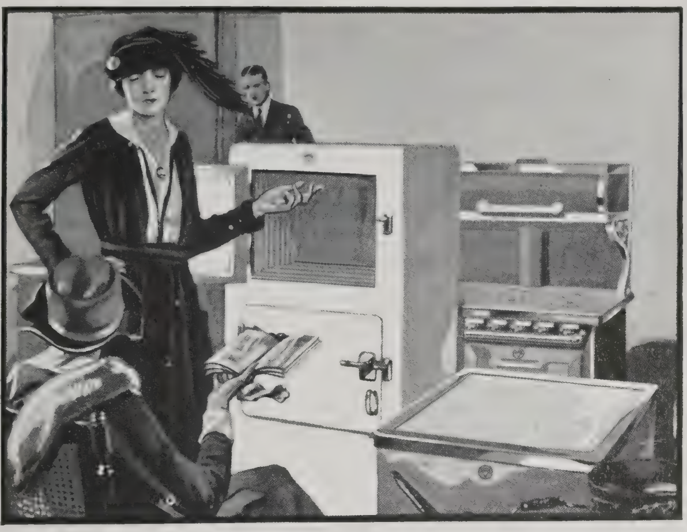
* * *

ENAMELER WANTED. For wet and dry process plant. Excellent opportunity. Write full particulars to box "T" ENAMELIST.

* * *

We understand that the plant of the American Enamel Works, at Nashville, Tennessee, was recently destroyed by fire.

When a man's lit a light lunch is the proper thing.



Your profits are measured in terms of surface

When enamelers desire a quality sheet that enamels better, they invariably turn to ARMCO Ingot Iron, the purest iron made. Being a consistently uniform material, it means economy—and larger profits. Another factor of interest: many enamelers will be interested in knowing more about ARMCO Deep Drawing and Spinning Stock—why it is ductile and forms easily. A line to the address below will bring you complete information.

The American Rolling Mill Company
Middletown, Ohio

(Export) The ARMCO International Corporation

Cable Address: ARMCO Middletown

ARMCO TRADE MARK INGOT IRON
The Purest Iron Made

HOW'S THIS FOR SPEED?

To see how rapidly a tree could be transformed into a newspaper, three trees in the neighborhood of a German paper mill were cut down at 7:35 A. M. The trees were swiftly barked and pulped and a roll of paper from their pulp was ready at 9:34 to be rushed to the nearest newspaper plant, where the presses began printing at once. By 10 o'clock exactly the newsboys were crying the paper in the street.

~~~

Here's a letter just received by a friend of ours, which explains why some people can't buy new stoves. Incidentally, it should make most of us realize how well off we are:

"This September coming we will be keeping house 32 years and this is the first new stove we bought from the factory. We reared 12 children and when my youngest child was 8 years old i saw an ad in the paper of a Baby Boy that wanted a home so we got him and now he will Be 6 years old this fall. So you see we never had the price for a new stove till we clothed and fed the family."

~~~

REDUCE EYE HAZARDS

W. E. Watters

National Malleable Castings Co.

Out of about 700,000 of the non-fatal accidents occurring annually in the United States about 60,000 are injuries to the eye, and, in the Nation as a whole, it is estimated that 200,000 persons annually receive eye injuries.

Hazards to the eyesight of industrial workers are found chiefly in the following industries and occupations: The manufacture of iron and steel; machine operations; chipping; grinding and polishing; riveting; welding and cutting; mining and quarrying; sand blasting; woodworking, and where there is exposure to irritating and poisonous dust or fumes and gases, or to intense light and heat. These are not cited in the order of their importance as productive of eye accidents. In chipping operations there is always danger of the eyeball being penetrated by flying slivers of metal, which sometimes have such velocity that they penetrate very deeply and have been known to lodge in the optic nerve. The use of goggles is the most effective means of preventing accidents from this cause.—*Indus. Psychol*

~~~

Hammer-Bray Co., Oakland, Calif., manufacturers of enameled stoves and ranges, is establishing a branch plant in Los Angeles, Calif.

~~~

Mr. W. C. Cummings, formerly with the Beach Foundry, Limited, Ottawa, is now with the National Stove Co. of Lorain, Ohio.

Ill-time advice often makes a wise man look like a fool.

SIL-O-CEL
HEAT INSULATION

IT PAYS TO INSULATE

IT PAYS TO INSULATE

Wherever Heat is Used

Heat-Tight Construction in an enameling furnace is as sound engineering as water-tight construction in a tank.

Heat leakage, in fact, amounts to much more than a waste of fuel. It means unequal temperature distribution—cold corners and unequally heated charges.

It makes for uncomfortable working conditions around the heated equipment. Often it results in shortened refractory life.

Yet the Cost of effectively insulating against heat radiation actually amounts to nothing in the long run. The fuel savings thus effected alone more than repay every expenditure for the insulation within the first year of its service. The other benefits are all "bonus".

Sil-O-Cel engineers have worked out practical methods for insulating every kind of heated equipment. Walls of firebrick or steel, bases, doors, tops—all can be made effectively air-tight.

Write for Bulletin T-8 which goes into detail on the insulation of standard types of industrial furnaces and ovens.

CELITE PRODUCTS COMPANY

11 Broadway · · New York
53 W. Jackson Blvd · Chicago
1320 S. Hope St · Los Angeles
140 Spear St · San Francisco
OFFICES AND WAREHOUSES

Celite Products · Limited
New Birks Bldg · Montreal · Que.
Celite Products Corporation
147 Windsor House Westminster ~ London · Eng.
IN PRINCIPAL CITIES

CELITE PRODUCTS
BARRIERS
TO INDUSTRIAL WASTE
FILTER-CEL AND SUPER-CEL FOR FILTRATION
SIL-O-CEL FOR HEAT INSULATION
CELITE FOR BETTER CONCRETE
©

The appliance testing laboratory established at Cleveland by the American Gas Association will soon be ready to test gas stoves. Each model or type of range sent to the laboratory will be subjected to a series of tests to discover if it meets requirements established by the gas industry. If a stove passes, the laboratory test, it will receive the official stamp of approval and be offered to the public as a product guaranteed to reach the highest standards of safety construction and performance.

It is believed that operations of the laboratory will end the marketing of inferior appliances, because gas company officials have expressed an intention in future to deal only in stoves which receive the approval of the laboratory staff.

An idea of the extent to which the laboratory will function is gained from figures which show that there are about 250 manufacturers of gas stoves and perhaps 2,500 different models in this country. In addition, there are 100 manufacturers of water heaters, 125 of room heaters, 20 garage heaters, 25 of steam gas boilers, 25 of furnace and miscellaneous appliances, making a total of 555.

* * *

The National Enameling and Stamping Company earned $2.99 a share on its common stock in 1925, as compared with $1.11 a share in the previous year.

* * *

FOR SALE—A Chicago Pneumatic, 10x10 compressor, in very good condition. If interested, write Mr. A. E. Krebs of the Belleville Enameling and Stamping Company, Belleville, Illinois, for further information and price.

* * *

John Dryer, formerly with the Elwood City Enameling Co., is now located with the Lindeman & Hoverson Co., of Milwaukee, Wisc.

* * *

Mahlon E. Manson sent us the following clipping from the Line o'Type column of the Chicago Tribune, He suggests that we arrange to use this system at Detroit next year.

"After ten years road experience am forced to ask you why delegates to conventions have rooms in hotels stop they don't use them for sleeping stop they should be placed together in one large padded paddock there to rave and battle without let or hindrance to other guests."

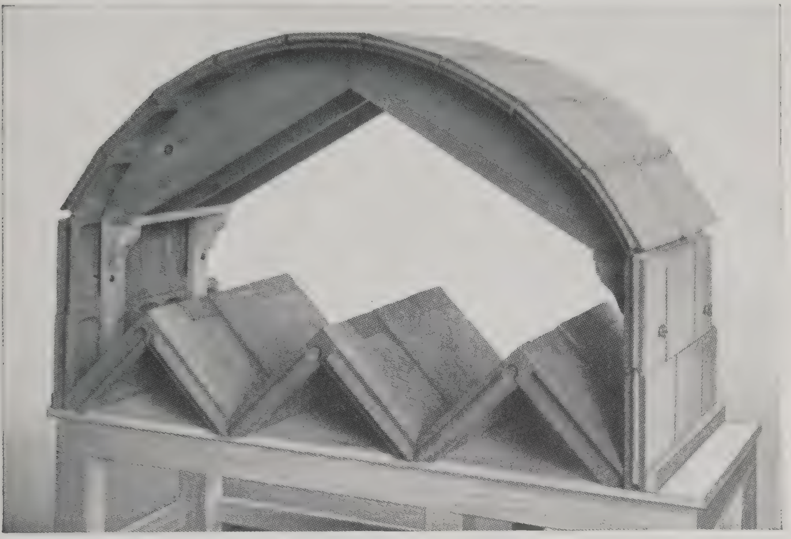
* * *

Alundum enameling muffles were recently installed in the plants of the Roesch Enamel Range Co. and the Cleveland Enameling & Mfg. Co.

* * *

The Belleville Enameling & Stg. Co. of Belleville, Ill. recently installed oil burning equipment on all of their furnaces and smelter.

A little logic often convinces quicker than a long line of talk.



Section of Alundum Muffle for Vitreous Enameling furnace.
Wall and arch tiles—Ferro Enameling Supply Company design.
Bottom—Manion "V-Bottom." Width 5 ft.
Side walls 15 inches. Rise 15 inches.

Alundum Refactories are made of electrically fused alumina produced in an electric arc furnace. Alundum muffle plates are mechanically strong, chemically inert, have high conductivity. For these reasons they are ideally suited for the construction of enameling furnaces.

Repeat orders for Alundum Muffles of the type shown in the illustration above are the best evidence of satisfactory performance.

NORTON CO. WORCESTER, MASS.

TRADE NORTON MARK

NORTON REFRACTORIES

Bits of Frit

BEWARE OF STRANGERS

Benevolent Gentleman (to small boy): "And what is your name, sonny?"

Small Boy (suspiciously): "G'wan, you're not going to put me down on any mailing list."

* * *

"Mr. Dipley, I think I deserve a raise."

"I can't afford it, but you can call yourself a private secretary instead of a stenographer."

* * *

"Oh, kid, wouldn't it be gr-rand to be in the movies?"

"*I* was in the movies wunct!"

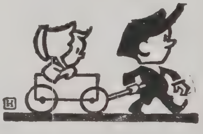
"You *was?* Whydja get out?"

"I woiked too fast for the camera!"

* * *

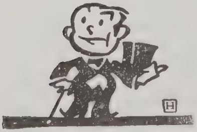
He—So they sold their country home?

She—Oh, yes! All their friends had been to visit them!



* * *

SOMETHING IN A NAME



Policeman (producing notebook)—"Name, please?'

Motorist—"Aloysius Alastair Cholmondeley Cyprian—"

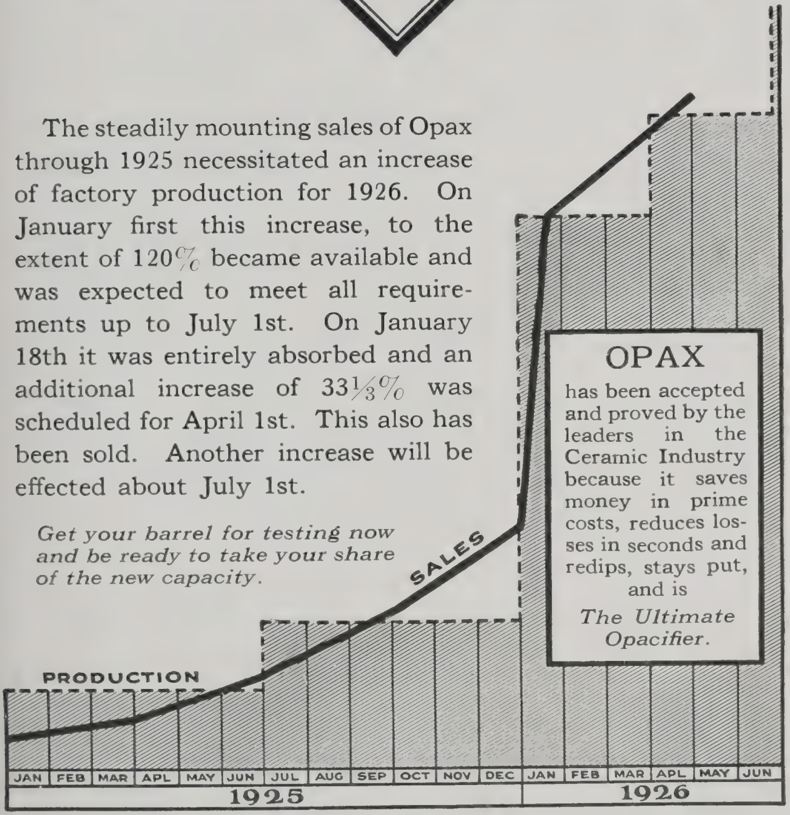
Policeman (putting book away)—"Well, don't let me catch you again."—*Punch* (London.)

While the automobile has succeeded in displacing the horse, the nightmare still carries on.

TAM
OPAX

The steadily mounting sales of Opax through 1925 necessitated an increase of factory production for 1926. On January first this increase, to the extent of 120% became available and was expected to meet all requirements up to July 1st. On January 18th it was entirely absorbed and an additional increase of 33⅓% was scheduled for April 1st. This also has been sold. Another increase will be effected about July 1st.

Get your barrel for testing now and be ready to take your share of the new capacity.



OPAX

has been accepted and proved by the leaders in the Ceramic Industry because it saves money in prime costs, reduces losses in seconds and redips, stays put, and is

The Ultimate Opacifier.

The Titanium Alloy Manufacturing Co.

Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT
R. D. Landrum, *General Manager*
6007 Euclid Avenue CLEVELAND, OHIO

A timekeeper for a railroad gang in Missouri asked a new workman his name.

"George Washington, suh," replied the dusky son of toil.

"You're not the man who cut down the cherry tree, are you?" asked the timekeeper, jokingly.

"No suh! 'Twasn't me, suh. This is the fust wu'k Ah's done for ovah a year."

* * *

BOILED

Dinner was late in being served. "The Missus" went out into the kitchen to learn the reason for the delay and came back weak from laughing very heartily.

"Oh, Katrinka looks so-o funny, John," she informed her waiting hungry husband. "The cooking brandy is all gone and she's trying to knit a sweater out of the spaghetti."

* * *

Young Bride: "Yes, Mother, thanks to my cooking school course, I know all about marketing. The only thing that puzzles me is whether you get gravy from the butcher or the grocer."

—*Wabash Caveman.*

* * *

Sap—"Never heard of that railroad before?"
Yap—"Which one?"
Sap—"Sothern and Marlowe."—*Iowa Frivol.*

* * *

HIGHER MATHEMATICS

Very New Office Boy (who has just handed long cloumn of figures to employer)—"I've added those figures up ten times, sir."

Employer—"Good boy!"

Very New Office Boy (handing up another slip of paper)—"An' here's the ten answers, sir."

—*Chicago Tribune.*

An ENAMELIST reader writes, "Some of your jokes we've seen before and some we've not seen yet."

ASBESTOS PRODUCTS

for Enameling and Allied Industries

Asbestos Fibre
Asbestos Yarn
Asbestos Cord
Asbestos Thread
Asbestos Cloth
Asbestos Clothing
- Coats
- Pants
- Aprons
- Mittens
- Gloves
- Patches

This is the famous reinforced mitt which is being used by the biggest enameling companies in the business. In a comparative test it lasted 100 hours longer than the next best mitt. Let us send you a trial pair.
Also furnished in reversible style, re-inforced both sides.

High Temperature Insulation for Hurricane Dryer and other makes.

High Temperature Blocks also 85% Magnesia Blocks.

Write for descriptive list and prices of full line.

Keasbey & Mattison Company

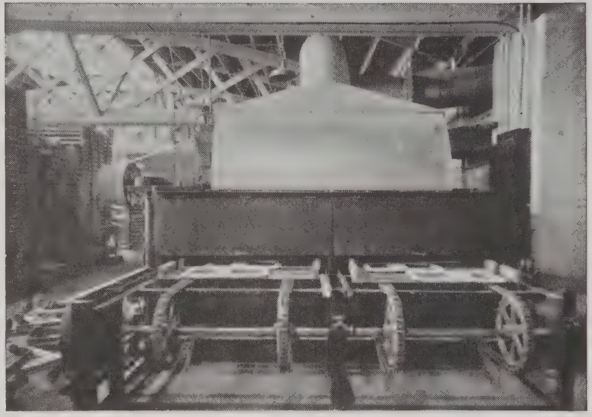
AMBLER, PA.

Cleveland Office
1160 West 11th St.

The Largest Plant of its Kind in the World.

If it's made of ASBESTOS we've got it!

“HURRICANE”
The Automatic Dryer



“Hurricane” Dryer for Enameled Ware

For Enameled Ware Drying, there is remarkable economy in the use of the “HURRICANE” Automatic Process. It saves labor by reducing the amount of handling; saves floor space by the efficiency of its air circulating method; assures uniformity; reduces the quantity of material in process.

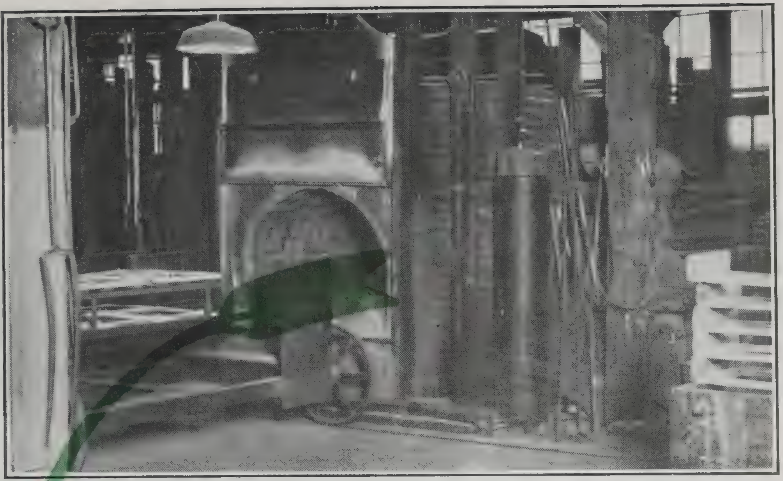
THE PHILADELPHIA DRYING MACHINERY COMPANY

Stokley Street above Westmoreland, Philadelphia, Pa.

Canadian Agents:
Ross Whitehead & Co, Ltd.
Montreal

HURRICANE
Ideal Drying Every Day

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.



Originators of the "Thin Section" Muffle

"ALUMITE" Leads
Others Follow

In May, 1923, the "ALUMITE" Thin Section Muffle, composed of Tile 1½″ thick paneled to ½″ thick, was first placed on the market. Recently our design has been copied by others. This is only another case indicative of the pioneer position "ALUMITE" Refractories maintain in the Enamel Industry.

WITH 38 YEARS EXPERIENCE behind our manufacturing personnel, our many years experience supplying and observing refractories in the Enamel Field and our modern research facilities, we can assist you by reducing costs and insure maintaining your production schedule.

CONSULT US.

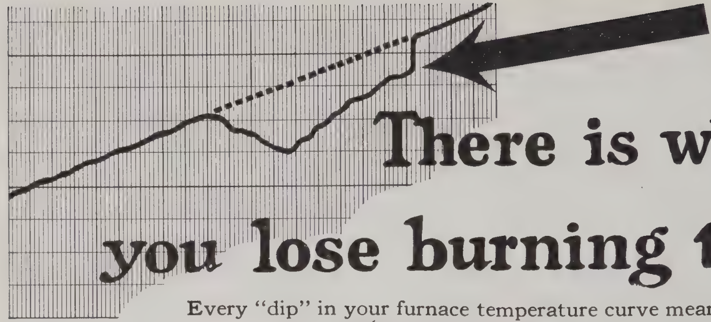
Send for Bulletins Nos. 21 and 22

THE MASSILON REFRACTORIES CO.

(Founded by W. G. Hipp)

MASSILON, OHIO

On the Lincoln Highway—Convenient for Truck Delivery



There is where you lose burning time

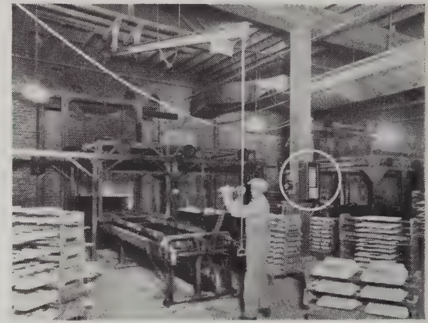
Every "dip" in your furnace temperature curve means lost time and wasted fuel while proper firing temperature is being restored—to say nothing of spoilage risks.

Guide your furnace operators for Better Results

Give your men dependable means of knowing—not judging—temperatures. And give yourself means of knowing that correct burning temperature schedules are maintained. Remember that better burns means more burns with less fuel—lower operating cost and larger returns on furnace investment.

Enamelers find that Brown Pyrometers relieve them from the strain of guessing furnace conditions, help them speed up burns, turn out more "firsts." And when "green" hands are taken on, Brown Pyrometers greatly simplify the difficulty and risk of loss incidental to breaking them in.

Get data on Brown Pyrometer performance in enameling plants.



No Time and Fuel Losses Here!

One of the furnaces at the well known Chicago Vitreous Enamel Product Company, Chicago, Illinois, equipped with Brown Pyrometers. Smooth temperature curves, economical operation and quality output are easy for enamelers in this up-to-date plant.

Address—THE BROWN INSTRUMENT COMPANY, 4590 Wayne Avenue, Philadelphia, Pa., or any of our district offices in New York, Boston, Pittsburgh, Cleveland, Detroit, Chicago, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City or Montreal.

Brown Pyrometers

Most used in the world

666.05
EN
Ceramics

The Enamelist

A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY

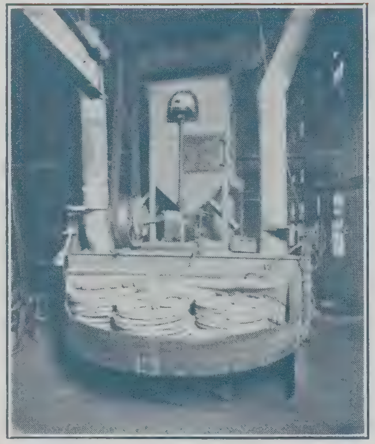
THE LIBRARY OF THE
MAY 25 1923
UNIVERSITY OF ILLINOIS

MAY, NINETEEN-HUNDRED-TWENTY-SIX

Big Production and Perfect Enamelling

come only from Big Production of Perfectly Cleaned Stock

PANGBORN SAND-BLAST EQUIPMENT *Gives Both*



PANGBORN
Type "LD-1" 8′ Automatic Rotary Table
Cleans fragile pieces without breakage.
Other types and sizes in 4′ and 6′ diam.

One of the largest enameling industries in this country tells us they operated their Pangborn Sand-Blast Equipment twenty-three hours a day continuously for five months, without a shut-down necessary.

They use Steel Abrasives and enamel white, grey and colors with perfect results.

There is a Pangborn Table, Barrel, Cabinet or Room of the right type and size to handle your work at lowest cost, whether you have much or little.

Send for Condensed Catalog and let us help you solve your enameling troubles.

Pangborn Sand-Blasts
and Dust Suppression Equipment

Pangborn Corporation Box 853 Hagerstown. Md.

The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

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R. A. WEAVER, EDITOR

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VOLUME 3 MAY, 1926 NUMBER 7

Porcelain? Vitreous? Enamel?

AT the ENAMELIST dinner at the Atlanta Ceramic Convention one of the chief discussions was on the subject of the proper name to identify enameled products. At the present time there is great confusion in the minds of the buyers as to what enamel really is.

The paint advertisers use the word enamel to distinguish some of their products. Automobiles claim to be finished in enamel. Refrigerator advertisements speak of white enameled linings when they mean paint. However, many buyers are fooled as they think they are getting a porcelain lining.

Right there you have another chance for confusion. In trying to distinguish between our products and paint enamels, many of our manufacturers use the qualifying terms of Porcelain Enamel or Vitreous Enamel. If we could concentrate on one of those terms we would be alright because it could be advertised and buyers could be warned of the difference between our products and paint enamels.

However, many companies in our industry have the name "Vitreous" or "Porcelain" in their company names, so it would be unfair to pick one of those names and all concentrate on that.

We have our choice of trying to get the paint industry to give up the use of the world "enamel" or of choosing an entirely new name, such as "Glascote," "Sanamel," or other descriptive name to advertise our product. Let's all think this over and find some way to eliminate the confusion in names between our products and paint products.

A good enameler is a jack of all trades and master of one.

Partial View of The Estate Stove Company, One of the Pioneers in Stove Enameling

The above is an airplane photograph of part of the immense group of factories built up by The Estate Stove Company at Hamilton, Ohio. For years this company has been a pioneer in the development of new devices for heating and cooking.

In their own plants, due largely to the training and ability of Mr. B. B. Kahn, they have developed methods and processes for producing a large volume of stoves and ranges at a minimum cost

This company operates two enameling departments,—one devoted to cast iron, the other to sheet steel, and has worked out new methods to bring these departments to a high state of efficiency. Mr. Kahn has been interested in the art of enameling for a great many years, and at one time spent more than a year abroad studying enameling processes, and he has also devoted a great deal of time to the study of the art in this country. His experience has given him a comprehensive grasp of the problems involved in the operation of a large enameling plant.

Where there is unhappiness there is no envy.

Functions of Raw Material Used in the Manufacture of Vitreous Enamels for Cast Iron and Sheet Steel

By H. E. Ebright
Ceramic Engineer

D—*METALLIC AGENTS IN GROUND COAT ENAMELS FOR SHEET STEEL*

In ground coat enamels for sheet steel the oxides of cobalt, nickel and manganese are more commonly used. The oxides of iron and copper are sometimes used for certain requirements. Although the action of these metals in the ground coat as regards the bond between the enamel and the iron is more or less a matter of conjecture, it is evident that the addition of metallic oxides increases the tendency of the enamel to stick to the iron. Many attempts have been made to use so called white ground coats with the use of little if any of the above mentioned metallic oxides. These, to date, might be classed as a total failure when they were subjected to commercial runs of ware. The writer knows of several classes of ware on which white grounds have had fair success, but at the present writing, knows of no one instance where they would successfully take the place of the blue or black ground coats, so commonly used in the industry today. There is no doubt but what, with continued research in the enamel field, sheet steel grounds will be developed which will require very little of the expensive metal oxides now in use, but at the present time, all enamelers have a healthy respect for the value of metal oxides in ground coats.

The oxides of cobalt, manganese and nickel are used in several different combinations. They are very seldom used individually. The best commercial ground coats use either a combination of cobalt and manganese, cobalt and nickel or a combination of cobalt, nickel and manganese. It is very expensive to use cobalt alone and in addition, experience has shown that ground coats have a wider and higher firing range when cobalt is used in combination with either nickel or manganese than when used alone. The writer knows from experience that it is easier to overburn a straight cobalt ground coat than one which has nickel or manganese in addition. Depending on the ratios and per cents of the metallic oxides used, ground coats may be produced in colors ranging from light blue to a veritable black. Cobalt is often used in smelting enamels to produce deep blue colors such as Western Union Blue. As black is a combination of all colors, many enamelers have made use of this fact in obtaining most of their black color in enamels at the smelter by use of the proper per cents of several different metallic oxides.

Metallic oxide additions to the ground coat glass at the smelter have quite an effect on the coefficient of expansion and contraction of the enamel in relation to that of the steel. This is quite an important factor because if the right combination between the steel and the ground coat is not obtained, fish scale, chipping, hair lines or, in fact, any number of the enamelers' favorite troubles may arise. As regards the adhesion of the ground coat to the iron, the writer does not believe there is an actual fusion of the iron and enamel, but that there is an oxide film bond set up between the enamel and the steel. This, no doubt, is due to the action of the metallic oxides in the ground coat with the steel to which it is applied. This may account for the fact that cover coat enamels applied direct to the iron will not adhere. It is a known fact that enamels free from metallic oxides actually dissolve the iron when applied directly to it while those containing cobalt alone or in combination with either manganese or nickel do not, but, set up a bonding oxide film between the iron and the enamel.

Summing up in general, metallic oxides in the ground coat enamel for sheet steel, gives the resultant enamel more gloss, makes it tougher and more stable and has quite an effect on the coefficient of expansion and contraction of the glass. Cobalt in the ground coat intensifies the whiteness of the cover coat enamel. Metallic oxides, especially cobalt, are good indicators of the extent of burning of a ground coat and are an invaluable aid to the enameler for this reason. Some of the metallic combinations used in practical ground coat enamels today are as follows:

1. .4% Cobalt Oxide
   .75% Nickel Oxide

2. .5% Cobalt Oxide
   1.5% Manganese Dioxide

3. .3% Cobalt Oxide
   .4% Nickel Oxide
   .3% Manganese Dioxide.

(To be continued)

* * *

FURNACE DEALERS TO ADVERTISE

On the theory that intelligent and well-planned advertising will pay for the men who sell and install warm-air furnaces, the National Warm Air Heating and Ventilating Association has prepared a series of furnace dealer advertisements. They are distinctly "good will" in nature, aiming to impress upon the reading public the superiority of warm air as a method of heating and of putting the dealer closer to prospects by means of service.

There are twelve advertisements in all, one for each month, and are available to all dealers at a nominal cost.

* * *

It has come to be an axiom of successful business that profit is not the sole end to be sought. Business success in whatever field is more and more the result of policies which look to giving service to the public. The business which on the whole is likely to prosper most is that business which aims to give the customer something more than the mere commodity which he comes to buy—*Calvin Coolidge.*

* * *

One of the new users of Ferro Pickle Pills recently wrote in that he put a number of these pills into his sulphuric acid tank and was unable to find any improvement in the pickling. The Editor offers a fur lined derby for the correct answer to this problem.

* * *

Our many readers will regret to hear of the recent death of Mr. Roessler, of the Roessler Hasslacher Chemical Company.

Money doesn't care who owns it.

No Wonder Our Editor is Happy

Our monthly report shows that in April the Enameling Industry was running just a fraction ahead of March, which was a big month. Other industries seem to have slowed up a bit, but enameling goes on stronger than ever. No wonder Bob is smiling.

The figures show that 85½% of the furnaces were operating in April, while in March just 85% were operating.

Here are some of the comments made:

"Operating 100%."

"Operating twenty-four hours a day."

"Prospects great—mostly cast iron," from a firm in Tennessee.

"Plenty of work ahead for another big month," from a plant in the East.

"Three 8 hour shifts per furnace. Busy as can be."

"Business fair—think will go big in 30 days," states a plant in the middle West.

"Business is crowding our doors."

"Running day and night."

"Outlook very good."

"Going full speed, night and day."

"Going strong."

"Running to capacity and future prospects good. Canadian business still increasing. Outlook very good."

Indications are that May will also be a big month in the enameling industry, and we hope to be able to show, in the next ENAMELIST, that furnaces are running to about 90% capacity.

The head is older than the book.

An Interesting Enameling Career

IT is unfortunate that most of our readers are not in a position to travel from enamel plant to enamel plant, as they miss meeting some very interesting people. For instance, in Chicago at the Crown Stove Works, Benjamin F. DeVorak is a man who has had a most interesting lot of experiences in the enameling business. We recently asked him for the story of his career, which we give as follows, and which we know will be of interest to all of our readers.

"Nothing seems permanent but change,"states Mr. DeVorak. "The industrial development of certain industries passes from Country to Country, as from man to man. That is my conception of the enameling industry, and enameling has been my hobby since I was a boy.

At the age of 12 I had the good fortune of witnessing porcelain enameling done on a large scale at the Austrian Stamping and Enameling Works at Briin, which is one of the largest enameling plants in Europe. They had 12 double muffle furnaces in operation at that time. I also visited three other large plants which were under their management, and all in all they had 72 furnaces in operation. Many hours of my leisure time were spent in this way.

B. F. DeVorak

My fondness for decorative work and painting was probably responsible for my ambition to be an enameler. At the Briin works much decorative work was done on white kitchen utensils. My ambition was to be a dipper and burner, and finally I was put on the payroll, at the age of sixteen.

Marbelizing was done at this plant in 48 different designs. This was very interesting to me, and things turned to the better

Coleridge said, "In today already walks tomorrow."

for me when I was transferred to the Laboratory, where experimental work was in progress at all times. And through the kindness of the well known Dr. Julius Greenwald, under whose immediate observation I was placed, I soon learned the elements of the enameling trade, the chemicals and their properties, and I attained considerable knowledge in the manufacture of enamels for different processes.

Coming to the United States at the age of 19, I went to work for the Lisk Mfg. Co. as a dipper. Two years later I was given the foremanship of the New Castle Stamping Co., Ingram-Richardson, and Star Enameling & Stg. Co.

Up to that time I had gained a great deal of experience, but my ambition led to me give up my position here, and sail for Germany, where I spent 2 years on all classes of work there. I was with the Cosvig Enameling Works, where the well known Stransky Kitchenware was made; also with Hibby Metal Stamping & Enameling Co., Friedlander Stamping & Enameling Wks., Weisenze Enameling Wks., Hamburgh, Bergedorf Enameling Wks., and Reimsheider Enamel Works. In the last two plants I was in charge of the enameling departments.

Upon returning to the States I installed the enameling plant under the name of Porcelain Enameling & Mfg. Co., and also the enameling department for the Chalmers Motor Car Co. I then became associated with the Crunden Martin Co., and later with the American Thermometer Co. For the past 7 years I have been with the Crown Stove Works."

* * *

The Hardinge Company are becoming quite versatile in their accomplishments. Their latest line is weather forecasting, which we believe is designed for a limited period only—when the golf season is at its height. If you need a guide to aid you in making your appointments, we suggest you write them for a copy of their Weather Forecast. We are informed it is absolutely free. You don't even have to buy a Hardinge Mill!

* * *

L. A. Althoff Mfg. Co., Laporte, Ind., manufacturer of gas stoves, will move June 1 to Des Plaines, Ill., to be near its source of castings supply, the Des Plaines Foundry Co.

A Charleston hound burries no bones.

Necessity for Research in the Porcelain Industry

LAST June before the American Institute of Chemical Engineers Mr. A. D. Little read one of the most straight-from-the-shoulder papers that it has been our fortune to see in a long time. The W. S. Tyler Company of Cleveland thinks so well of this paper that they have reprinted it in their House Organ. We are sure that a card to them will get the entire paper.

The theme of Mr. Little's paper is: That a modern industry without Research is doomed and this is a sentiment that we subscribe to heartily. We have long believed that the Enamel Industry was doomed to failure unless someone championed a programme of exhaustive research, not only into the hidden reactions of enameling making but also into the application of enamel to the base metals.

Mr. Little takes as his text "Belshazzar's Feast" and "The Handwriting on the Wall" and points out that the handwriting is there in a great many industries in the United States but in many many cases the management looks at the handwriting as a mural decoration rather than a warning. His crowning Bon Mot, slightly paraphrased to fit the enamel industry is certainly pat. "There has been for years a comfortable opinion among those engaged in the business of making enamel that an understanding of its mysterious operation was inherited, like red hair. A chemist could always tell a born enamel maker but he couldn't tell him much." It is to laugh!

The paper goes on to give concrete illustrations of many industries, for instance, the artificial silk, and points out that the Europeans are now making silk of wood pulp and selling it at two dollars a pound while the cotton mills stand idle.

Another plant illustration is the potash industry of which only one out of the forty-four concerns in the United States developed during the war, is now solvent and this one is the only one that has a complete research laboratory.

Everyone knows the industrial tragedy of victrolas; also how the new automobile finishes gave a solar plexus blow to the varnish industry.

A wise motorman will learn to drive a bus.

Certainly the enamel industry is not one that has not scientific problems and we all know that it has practical problems and we believe that research, both scientific and practical, will be in the future the largest single factor in creating and establishing on a firm foundation the entire enamel industry.

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SURVIVAL OF THE FITTEST

By Charles S. Kinnison

However well you fill your job,
Though keen you are, and smart—
There's always someone in the mob
To better fill your part,
You'd like to feel, and so would I,
That none our place could fill,
But well we know that bye and bye
There'll come the man who will.

But let him come, whoe'er he be,
To fill the place that's mine,
If he can take my place from me,
All right—I shall not whine,
And since I know that come he may,
Nor can I name the time,
Then I should see that every day
I onward, upward, climb.

Were I to make my place secure,
Then I must lift it high—
The lowly place can't long endure,
As failures testify.
So, may I choose some lofty crest,
As my ambition's goal,
And toward it may I invest
My life, my heart, my soul.

Whatever heights I may attain,
Though rich be my success—
Whatever summit I may gain,
I'm apt to lose unless
Unto each day that's mine to live
I give my best, my all.
If any less than that I give
The place I've won will fall!

The softer the dough, the more it's kneaded.
~~~

Enameling Profit or Loss

ONE of our good friends recently gave us some very interesting information on the relation of labor and material costs to profits. This man operates a small jobbing plant and during eight months of 1925 had total sales of approximately $62,000.00. His labor amounted to 39.7% of his sales and his enamel materials, which he purchases, amounted to 25%. On that basis the plant operated on a very substantial loss, in fact, so substantial that a complete change was made in the method of operating the plant. No change in management was made and they continued to use the same material.

Under the new plan in the last four months the plant has produced about $35,000.00 worth of work with the labor cost amounting to 27% of the sales and the material cost amounting to 19% of the sales. Needless to state, under the new plan a substantial profit has been made instead of a loss.

This indicates the necessity for a thorough study of operating conditions where plants are not producing properly. Here is a place, where no new equipment, no new management or materials were used, yet the plant was pushed over from a heavy loss to a substantial profit.

* * *

Here's a real record of service in the enamel business. John Bardusch started work with The Grand Rapids Refrigerator Company twenty-five years ago, and has been serving them almost continuously ever since. We venture to state he is producing more work and better work today then ever before.

* * *

As the ENAMELIST goes to press, what will probably be the best fish story of 1926 comes to our desk. Some friends of ours up in Oregon tramped for 5 miles to reach a fishing stream, where they fished for several hours—catching one small fish, which they lost on the way home.

* * *

The largest order ever given for bathtubs for an American built passenger steamship has been placed for S. S. Malolo. The order calls for 120 porcelain enameled tubs, with showers complete. The Malolo will be placed in service in the Spring of 1927, and will make the trip between San Francisco and Honolulu in 8 days, cutting 4 days from the fastest time now made.

Balloon trousers and high flying often go together.

Here's the first fish story of 1926. The picture shows Herb Livesay and Ray Ross of the Rhinelander Refrigerator Company and last, but not least, a forty-one pound muskellunge, which Mr. Livesay caught last summer. He reports a very exciting time in landing this muskellunge, because they had no gaff hook or gun, but finally had to pull it up on shore, where Mr. Livesay got a straddle of it and held it by the gills, while Mr. Ross clubbed it on the head. The muskellunge was fifty-three inches long. It was caught with a forty-five pound test line with no rod or reel. It is the biggest fish ever caught in Oneida County and was caught in the Wisconsin River.

The Editor already has an invitation from Charles Parkhill of the Gibson Refrigerator Company for fishing this summer and is open at this time for invitations from other parts of the Country.

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The Gurney Foundry Co., Ltd., Montreal, Canada, has just completed installation of an electric enameling furnace. Business conditions in Canada are very favorable. It is interesting to note that with 40% duty added, several makes of Canadian stoves are being imported by United States dealers.

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Ingram-Richardson Co. will soon build an addition to their Bayonne, N. J. plant.

Artists' models aren't as bad as they're painted.

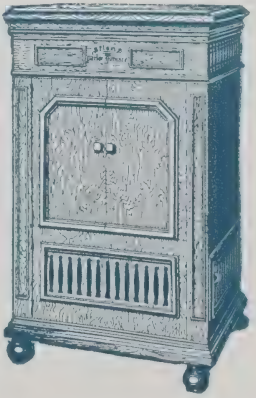
D. B. Noland

We are glad to present here a picture of Mr. D. B. Noland who started the enameling department for the Allen Mfg. Company of Nashville, Tenn., and has operated it very successfully from the beginning. Previous to his association with the Allen Mfg. Company he was with the American Enameling Works of Nashville, having become associated with them after a course at Vanderbilt University.

Mr. Noland's work is especially interesting as it is comprised almost entirely of graining either in mahogany or walnut. A large percentage of the work is the graining of Parlor Furnaces which is a specialty of the Allen Mfg. Company.

It is very interesting to see the younger men in the Enameling Industry taking such a large part in the work.

Allen Parlor Furnace to right.



Ambition and happiness seldom go together.

ARMCO
TRADE MARK

INGOT IRON
The Purest Iron Made

Why pure iron enameling sheets assure a more salable product

Enamelers who use ARMCO Ingot Iron know and appreciate it for what it really is—a consistently pure, uniform iron, practically free from occluded gases and irregularities of surface.

In the jobbing house and retail store the faith and rare judgment of these enamelers is reasserted by thousands—yes, millions of buyers.

They buy for quality—and the ARMCO blue and gold label on porcelain enameled products is a never-failing identification mark of substantial quality.

Demand for ARMCO labeled porcelain enameled products is increasing by leaps and bounds. Many enamelers are reaping their share of this golden harvest by using ARMCO Ingot Iron exclusively.

Are you?

Write to Department D at the address below. Just say you'd like to know more about the "increased profits" possibilities of ARMCO Ingot Iron. This information is free —with no strings attached.

The world's largest manufacturer of special analysis iron and steel sheets for exacting purposes.

The American Rolling Mill Company
Middletown, Ohio

(Export) The ARMCO International Corporation

Cable Address: ARMCO Middletown

E. M. Colquhoun of Enduro Porcelain Enameling Company continues to lead our contributors' column. The following very interesting historical article was sent to him by Bill O'Donnell, the very popular advertising manager of the U. G. I. at Philadelphia. Mr. Colquhoun sent it on to us.

ENAMEL

Among the interesting inventions which have come down to us from the Middle Ages, the art of enameling takes a salient position. Its inventor, Bernard Palissy, lived so long ago that modern books have lost sight of him. The art of enameling originated in very ancient days. The Egyptians used bricks of impressive clearness and luster for the decoration of their temples. The Greeks and Byzantines were also users of enamel.

This exquisite art, while old, was forgotten, in the West at any rate, due to the troublous character of the times. Enameling is pre-eminently an art of the luxurious ages, and has never thrived in times of stress or war.

Bernard Palissy was born about 1510, although the exact time and place are not known. His father, a glass worker, was too poor to give the inventor a good education. He endeavored to educate himself. He acquired a knowledge of geometry, drawing, painting and modeling, and also land surveying. At the close of his apprenticeship he followed the custom of the times and became a traveling workman.

In his travels he visited the chief cities of France, Burgundy and Flanders, and stayed for a time on the banks of the Rhine. He availed himself of the opportunities in traveling to acquire a knowledge of the world. He also studied at this time natural history, geology and chemistry.

The year 1539 found him in his native land at Saintes, France. Here he married and practiced glass painting and surveying. When the council of Francis decided to establish a salt tax, Palissy was commissioned to survey and prepare a plan of the salt marshes in the neighborhood.

One day Palissy saw among the treasurers of a nobleman a cup of Chinese porcelain, then regarded in Europe as one of the wonders of the world. He was inspired by it and determined to discover the mode of producing white enamel.

Palissy had to start his investigations at the elementary processes. He had to study the various sorts of clay and earth, and to acquire the arts of molding and turning. He made a collection of different substances, pounded them up fine and spread them over pieces of broken earthen pots. He had no furnaces, so he built one. In describing his work, Palissy said:

"But I had no idea how much heat was required. Perhaps I heated my furnace too much, perhaps not enough. Sometimes my ingredients were all burned up, sometimes they failed to melt at all."

His resources were meantime fast approaching the point of exhaustion. His wife was displeased with the turn of affairs and her mood did not improve when Palissy was at last compelled to burn the furniture and even the floors of his house to keep his furnace running.

A blotter's an article you look for while the ink drys.

Feldspar and Flint Grinding Revolutionized

Remarkable savings are effected through the application of the new Hardinge System of grinding and air separating.

The product is uniform and any degree of fineness desired can be secured.

Write for information.

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CABLE ADDRESS "HARDINGMIL NEW YORK"

Rough roads lead to beautiful scenery and not much else.

Palissy was about to give up when one day he noticed that one of the fragments was covered with a brilliant glazing. He was at last on the right track. It took months more, but success was near. He finally invented a new kind of ware superior to anything yet produced.

He soon became famous and was patronized by the royal family and the nobility. The king gave him a patent and about 1562 he removed to Paris and set up his pottery works. His sculpture in clay and his enameled pottery won recognition as meritorious works of art, and came into demand for the decoration of the homes of the wealthy.

* * *

A LOVE LYRIC

I'm not going to have my hair cut,
    I'm not going to wash my face,
I'm not going to clean my teeth or shave,
    Nor fasten up my lace;
        For by the stars above me
        My love no longer loves me,
She is the only cause of my Tonsorial disgrace.

I'm not going to have my boots brushed,
    I'm not going to cut my nails,
I'm not going to use a knife or fork,
    But live on salt sea snails;
        For by the stars above me
        My love no longer loves me,
So I will go and fill with tears
    Two large enameled pails.

—H. G. G. H., in Cambridge Granta.

* * *

Our readers will be more than pleased to know that Mr. and Mrs. Homer Swope are now the very proud parents of a baby girl, born on March 13th and named Mary Ann Swope.

* * *

Newark Stove Company, Elizabeth, N. J., has been incorporated with $100,000 capital by Helen Bauman, Martin Kohngut, and Samuel Freeman. Martin Kohngut, Elizabeth, is attorney.

Is prohibition responsible for the popularity of the iceless refrigerator

Time Tested

It is exactly forty years since we first tapped the ample deposits of Kentucky fire clay and erected at Ashland the first plant in Kentucky for the manufacture of refractories.

In those forty years the quality and uniformity of the Kentucky fire clays have become nationally recognized. Today Ashland brick are used from coast to coast and the three present Ashland plants have a combined capacity of 120,000 nine inch equivalent daily.

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND, KENTUCKY.

Sales and Service Offices

New York	Chicago	Cleveland
Detroit	Indianapolis	Havana, Cuba

A Sunday paper makes the best regulated living room look like a theater after the audience has left.

IF you have ever traveled from Grand Rapids to Greenville, you will remember that the very early train wanders slowly through a pleasant and prosperous country. In the early morning, however, even the most pleasant scenery palls after a bit. After looking over the balance of the passengers without finding anyone particularly interesting, the editor entertained himself by figuring over the number of enameling plants he had visited. The total was surprising. All in all one-hundred and forty-one plants had been looked over carefully. This didn't include other plants where the writer had traveled as far as the office and hadn't received any invitation to visit the plant.

The list included five plants in California, one in Kansas, fourteen in Missouri, eighteen in Illinois, five in Wisconsin, three in Minnesota, thirteen in Michigan, three in Indiana, twenty-six in Ohio, sixteen in Pennsylvania, five in Maryland, three in New Jersey, eleven in New York, five in New England, seven in Canada and a few more scattered in the far South and other parts of the Country.

As a matter of interest, we would like to know if any of the other men interested in porcelain enameling have visited a larger number of plants than the above. If there is anyone and he will send in his list, we will be glad to send him a special prize which we are holding for that purpose.

* * *

The new "laws" of auction bridge, 1926, which will govern the game as played in the United States during the current year, went into effect Monday, April 5, with several important changes of rules.

In drawing up the new rules, the Whist club, recognized authority on auction bridge, has aimed to simplify and clarify the game.

Aside from the method of scoring honors, the changes from last year's rules are not radical. It is in the matter of trump and no trump honors that even those who reduce their bridge to its simplest form must take notice.

Under the new laws no difference between suits is recognized when it comes time to score trump honors.

"Simple honors" count 30 points, whatever the trump. Four honors divided, 40 points; five divided, 50 points.

Four honors in one hand count 80 points; four in one hand and fifth in partners, 90 points; five in one hand, 100 points.

"No trump" honors remain unchanged, as does the scoring of tricks.

The purpose of this change is to eliminate further the difference between suits.

The effect of the change is to decrease the advantage of the player who happens to pick up a good hand of spades instead of clubs, and to greatly simplify the honor score and facilitate addition.

* * *

A talk on the care of kitchen utensils was broadcasted over KDKA, Pittsburgh, on April 21st, by F. F. Rupert, of the Mellon Institute. Some good information on enameled ware was given.

A traffic cop has more power than a king.

IN A RECENT REPORT, the Bureau of Standards state:

Wet Process Enamels for Cast Iron—The conclusions from this work are based on the results obtained in the application of 132 enamels to approximately 900 castings. In addition, some of our laboratory results were checked at a commercial plant. In this part of the work, conducted under regular factory conditions, 15 of the enamels were prepared in full-size batches and applied to 325 stove castings, such as oven and broiler doors, pouch-feed frames, fire door panels, etc. Although colored enamels of single-coat type are easily produced, the result of the work would indicate that it is possible to produce white enamels over a ground coat which are more satisfactory in texture and opacity than enamels applied directly to the iron.

Please note that Ferro White Cast enamels have been very successfully used for years with the ground coat developed by our Labaratory.

Write for sample.

The Ferro Enameling Company
Cleveland, Ohio

SOME REASONS WH

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R&H

A1

CERAMIC CHEMICALS
MINERALS, OXIDES
and
SERVICE

"America's Leading
Ceramic Material
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Quality is our unvarying policy.
Uniformity assures satisfactory results.
Service meets your every requirement.
Dependability is secured by our watchful attention.

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San Francisco

Plan to Reduce Sizes of Enamelware

J. H. Stevenson, vice-president of the Lalance & Grosjean Mfg. Co., New York, is chairman of the committee of the Sheet Metal Ware Assn., which is now seeking to reduce the varieties and sizes of enameled ware along the same lines as the reduction agreed upon for other sheet metal-ware at a meeting held in Washington with Secretary Hoover on March 12. At that time action on enameled metal ware was reserved for later, and Mr. Stevenson is now actively engaged in the preliminaries toward a similar agreement among the manufacturers, retailers, consumers and others interested in the elimination of superfluous numbers.

The Sheet Metal Ware Assn. held its regular meeting at that time in Washington, and the enameled ware section discussed primarily ways and means of combating unfair statements by manufacturers of ware from materials competing with enameled steel.—*Cer. Ind.*

* * *

Two new methods of producing ductile welds were announced recently by research scientists of the General Electric Company. One was developed in the Schenectady research laboratory by Dr. Irving Langmuir, and the other in the Thomson laboratory at Lynn, Mass., by Peter Alexander.

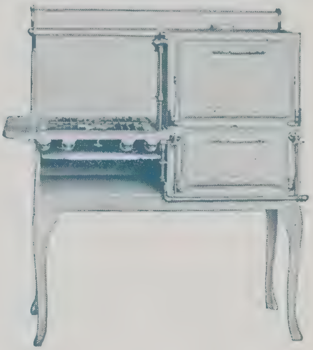
In both processes air is excluded from the metal by a stream of hydrogen or other gas. Thus the formation of oxides and nitrides in the metal through contact with the oxygen or nitrogen in the air is prevented and the fused metal is said to be as strong and ductile as the original metal.

In the process developed by Dr. Langmuir, a stream of hydrogen is passed between two electrodes. The heat of the arc breaks the hydrogen molecules into atoms. The latter, in resuming the condition of molecules a short distance in front of the arc, liberate an enormous amount of heat which makes the process more efficient than the usual welding methods. Since atomic hydrogen is a powerful reducing agent, it absorbs any oxides that otherwise might form and weaken the metal. It also makes possible the welding of alloys containing chromium, aluminum, silicon or manganese without fluxing or surface oxidation.

The process developed by Mr. Alexander utilizes the chemical and physical properties of hydrogen and other gases in their molecular state. This process embodies the same chemical advantages as in Dr. Langmuir's. In it the arc is struck between the metallic wire or carbon used as one electrode and the plate or object to be welded as another electrode. The crater of the arc is always on the object to be welded. Gaseous atmosphere is supplied in a stream around the arc, and for this purpose pure hydrogen, water gas, hydrogen-nitrogen mixtures or other gases may be used, depending on the nature of the work. This process makes arc welding more efficient in the welding of low-carbon steel, alloy steels and most of the non-ferrous metals and alloys.

What has become of the old-fashioned man whose evenings were spent on the books?

Better Enamel-Ware



At Lower Cost

Manufacturers of enamelware cannot base their costs upon the price of materials alone. The cost of production is an item of vital importance. Every enameler knows that the economy of production increases in proportion to the quality of material with which he works.

Toncan Enameling Sheets lower the production cost of enamel-ware by reducing enamel expense. Where ordinary steel stock is used, rejections from imperfect enameling will materially increase the cost. By the reduction of seconds alone the use of Toncan, instead of ordinary sheet metal, is justified.

The purity of Toncan Metal and the special treatment it receives during manufacture are responsible for the even texture and velvet surface of every sheet.

The enamel goes on smoothly and evenly forming a perfect bond with the metal at all points. Toncan actually clings to the enamel.

We have made a special study of enameling requirements and offer every facility we have to any enameler in the country who is interested in lowering production costs.

United Alloy Steel Corporation, Canton, O.

NEW YORK
SYRACUSE
CLEVELAND
PHILADELPHIA
CHICAGO

TONCAN METAL

DETROIT
PITTSBURGH
INDIANAPOLIS
PORTLAND
SAN FRANCISCO

It is easy to save money if you can't think of anything else to do with it

Porcelain Enamel Digest

Mr. R. C. Kaercher of The Wrought Iron Range recently called our attention to the following very good thought from "The Superior Sheet," published by the Superior Sheet Steel Co., of Canton, Ohio:

One of the most natural of human desires is that we may get ahead—financially, socially, intellectually.

The great mistake some of us make, however, is that, in order to advance, we must crowd some one off the road—that in order to rise we must pull some one down.

If a small man, one who lacks those qualities which make for advancement, discovers a mistake made by a fellow worker he calls it to the attention not of the one who makes it and might easily correct it, but rather to a superior.

As a rule executives have reached their positions because they have brains and know how to use them. When they are told of some one's mistakes—a mistake that could be easily corrected, they are pretty certain to realize that the tale bearer has less interest in the success of the concern than in impressing upon his superior his ability to discover faults in others.

Executives as a rule can size up an employee pretty accurately and are pretty certain to quickly sense the difference between constructive and destructive criticism of fellow employees.

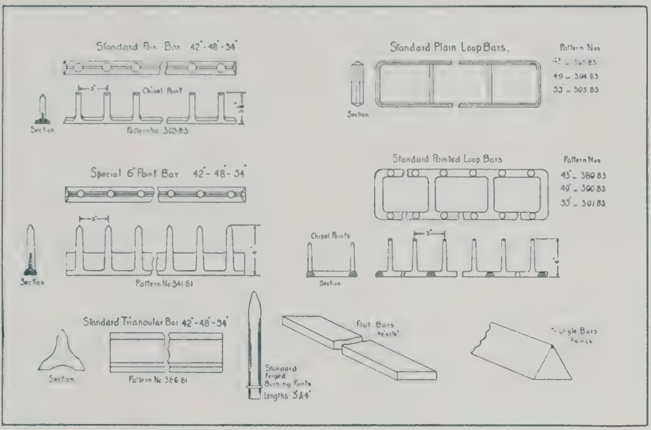
* * *

In addition to an initial quarterly dividend of 50 cents a share in cash, Electric Refrigeration Corporation has declared a stock dividend of 1¼ per cent, both payable May 1 to holders of record April 19. Net profit for the first quarter of 1926 was $969,885 before taxes, against consolidated profit of $664,193 for Kelvinator, Nizer and Grand Rapids Refrigerating companies, after taxes, in the same period last year.

* * *

According to the jury of the Exposition of Drama Arts, France leads the world in decorative arts, with Czecho-Slovakia a close second and England third. The Scandinavian countries also are commended for the general excellence of their exhibits.

What is harder to repress than the truth?



You will remember that we issued the first Enamel Equipment Catalog ever published and we now take pleasure in announcing the first complete Catalog of Burning Equipment.

Our sales on BOBLOY and CALOY undoubtedly exceed the *combined sales* of all other alloys. We operate a separate factory devoted to these products. Fine metal, excellent service and fair prices are the reason for our success.

The Ferro Enamel Supply Company
Cleveland, Ohio

Ever notice what a lot of clever and convincing arguments you can think of after it is too late to use them.

A second furnace has been installed at the Belding Hall Refrigerator Co. enameling plant at Belding, Mich. The capacity of this plant will shortly be considerably increased.

* * *

The task of distributing the stock given employees of the Crane Company at Christmas time as a present from Robert Crane was started recently. More than 8,000 shares were given to all employees who had been with the concern for more than 10 years, one share for each year. Each share has a present market value of $58, making the total value of the stock given away in all the Crane Company plants over $450,000.—*W. R. B.*

* * *

Recently in the office of R. V. Polen of the Delco Light Company, we noticed on his blackboard the following statement, "The modern idea of production is based on the idea of keeping the material moving while the men stand still." This may not be the accurate copy of the blackboard inscription, but conveys the idea which we believe will be interesting to many of our readers. Think it over.

Another well informed engineer recently told the writer that his plan was to leave the material on his production line the minimum length of time. Both of these ideas are worth thinking about.

* * *

Mr. A. V. Bleininger of the Homer Laughlin China Company, Newell, West Virginia, visited the Department of Ceramic Engineering, University of Illinois on April 15 and delivered two talks to the students of the department. The titles of his talks were: "The Young Ceramic Graduate and his Job," and "Physical Properties of Ceramic Bodies."

On Tuesday, April 20, Mr. H. F. Staley of the Metal and Thermit Corporation, New York City, visited the Department of Ceramic Engineering and addressed the students interested in metal enameling, on the following topics:

"Opportunities in the Enameling Industry for a Young Graduate;" "Composition of metal enamels and their physical properties."

* * *

Champion Electro-Icer Co. of Philadelphia has been incorporated with $15,000 capital to manufacture household appliances, electric refrigerators and oil burners.

If you want to double your money, fold it once.

A Fact that will Interest Every Man Who Must Make His Enamel or Glaze as White as Possible

TAM OPAX

Has Met and Passed the Most Severe Test Ever Given to any Opacifier

It is today in several unrelated plants
MAKING WHITE
Hundreds of Thousands of enameled cooking utensils
WITH A SINGLE COAT
Of White Enamel over a blue ground
WHERE FORMERLY TWO COATS
OF ENAMEL whitened with the old standard opacifier
WERE NECESSARY

Now Graded by Practical Enamelers The Ultimate Opacifier for every class of enameling

TAM OPAX

N. B. We are today supplying six plants for every one we served a year ago, and are manufacturing ten tons for every ton we produced a year ago. We haven't any stock on hand. Yet, on two or three days notice we can furnish you a barrel for your initial trials. By the time you have completed them, our capacity will again be doubled. We can and will make sufficient OPAX for every plant in the country.

The Titanium Alloy Manufacturing Co.

Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT
R. D. Landrum, *General Manager*
6007 Euclid Avenue CLEVELAND, OHIO

It was just about eleven years ago that the Detroit Stove Works started their enameling department. Right now they are operating six enameling furnaces and probably will add others soon.

* * *

Arthur T. Freer has been appointed sales manager of the Illinois Refrigerator Company, Morrison, Ill. He was recently sales manager of the Burlington Basket Company, Burlington, Iowa.

* * *

The volume of business, in tonnage and dollars, during 1925, was the largest in the history of the American Radiator Company, New York, according to C. M. Woolley, chairman of the board of directors. Net profits last year totaled $11,633,601, after charges, compared with $11,153,728 in 1924.

* * *

A. H. Jaeger, for several years with the Edison Electric Appliance Company, Chicago, has joined the Leonard Refrigerator Company, of that city. He will have charge of sales work in association with F. A. Harvey, vice-president.

* * *

WISE CRACKS FROM A GREEK RESTAURANT!

(*Spell Each Letter*)

Customer to Waiter—F U N E X ?
Waiter—S V F X.
Customer—F U N E H M ?
Waiter—S V F H M N X.

* * *

Headquarters of the Sesqui-Centenial Exposition in Philadelphia states they received a letter recently from a metallurgical firm in Massachusetts. "We understand," said the writer, "that there is a crack in the Liberty Bell, which we can repair at a cost of $1500." Someone might suggest they enamel it, to better preserve it for future generations.

When we have too much to do we usually neglect the most important things.

Some "Largest" Users of

M and T

Tin Oxide

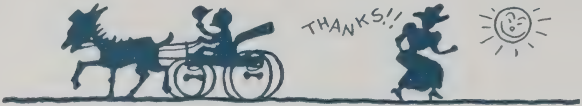
The two largest terra cotta companies in the country.
The largest vitreous sanitary pottery company in the country.
The largest solid porcelain pottery company in the country.
The two largest floor and wall tile companies in the country.
The largest faience company in the country.
The largest enameled sanitary ware company in the country.
The largest enameled stove company in the country.
The largest enameled stove parts company in the country.
The largest enameled steel specialty company in the country.
The largest enameled iron specialty company in the country.
One of the two largest enameled sign companies in the country.
Three of the largest enameled cooking ware companies in the country.
The class of firms using our product is impressive proof of its high quality and uniformity.

"A good article sold at a fair price will find an ever widening market"

Metal & Thermit Corporation

Ceramic Department
HOMER F. STALEY, Mgr.

120 Broadway
NEW YORK



Here's a picture of McFadon, of the St. Louis Enamelers' Club. (Picture taken some years ago).

* * *

The Chrysler Automobile people recently contracted for a small porcelain enameling plant. An electric furnace will be installed.

* * *

Clyde Thomas, formerly with Beach Foundry, Ltd., of Ottawa, Ont., is now with Stanley Insulating Co., of Great Barrington, Mass.

* * *

L. E. Ireland, formerly with Chicago Vitreous Enameling Co. is now with Ironton Stove Co., Ironton, Ohio. Mr. John Trenke, is now with the Portsmouth Stove & Range Co. of Portsmouth, Ohio.

* * *

FOR SALE—Chicago Pneumatic Air Compressor, 10x10. In first class shape. For particulars and price, write the ENAMELIST.

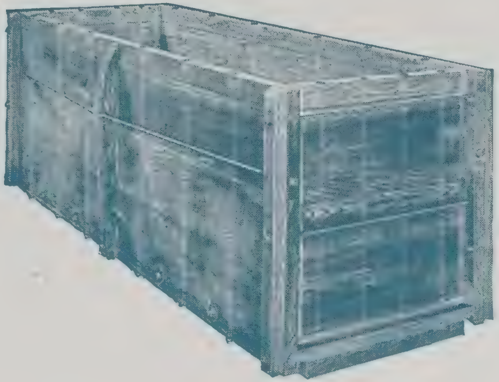
* * *

WANTED—To buy Armco Enameling Iron shearings, from which we can blank 2½ to 3'' circles. Material must be clean, free from rust, and of 20 gauge thickness. Write the Cooper Oven Thermometer Co., Pequabuck, Conn., and we will quote you a price.

* * *

We regret to learn of the recent death of Mr. Randle, of the Knox Stove Works, Knoxville, Tenn.

It isn't the perfect that is beautiful, but the promise of the perfect.



Acid Pickling and Plating Tanks are a specialty with us. These tanks are bolted with iron, Monel metal or B & M Bronze rods; depending upon the service required.

Lead-lined Pickling and Pitch-lined Plating Tanks can be furnished in any size.

Write for catalog—A Treatise on Wood Tanks

The Hauser-Stander Tank Company

Cincinnati, Ohio

You can expect some bumps when you get out of the rut.

A million dollar transaction whereby Albert Pick & Co. of Chicago will acquire the John Van Range Company of Cincinnati has been virtually completed.

The deal involves the main manufacturing plant of the Range company in Cincinnati, sales branches in Atlanta, Cleveland, Chicago and other cities, and several warehouses in Cincinnati.

Incorporated in 1883 to manufacture large ranges for hotels, restaurants, etc., the John Van Range Company was said to have done an annual business of approximately $2,000,000. The Pick company, a $25,000,000 corporation specializes in the outfitting of hotels, restaurants and large institutions.

* * *

"I hear Gayfellow drank himself to death when they put the padlock on the night club. Didn't think it would drive him to that."

"That wasn't it. He got locked in."—*Life*.

* * *

An interesting post-card from S. Weister informs us he has been having a fine vacation in Atlantic City, where he found it was very easy to forget all about the enameling business.

* * *

The Standard Stove & Range Co. was recently incorporated at Rome, Georgia. R. N. Towers will be President of the new Company, M. S. Lanier, Vice-President, and E. P. Grant, Secretary.

* * *

"HAS ANYBODY SEEN MY HAT?"

An Irishman coming out of ether in the ward after an operation exclaimed audibly:

"Thank God! That's over!"

"Don't be too sure." said the man in the next bed. "They left a sponge in me and had to cut me open again." And the patient on the other side said, "Why, they had to open me, too, to find one of their instruments."

Just then the surgeon who had operated on the Irishman stuck his head in the door and yelled, "Has anybody seen my hat?"

Pat fainted.—*Between Us*.

You can fool yourself all the time.

Let Drakenfeld Oxides put into your pocket profits that other oxides use in producing the finished ware.

Drakenfeld oxides are stronger. Therefore it costs less money to use them.

B. F. DRAKENFELD & CO., Inc.
50 MURRAY STREET
NEW YORK CITY

WOLVERINE ENAMEL CHOOSES OFFICERS

At a recent board of directors meeting of the Wolverine Porcelain Enameling Company, Detroit, Michigan, the following officers were elected: Heinrich Turk and Karl Turk, both of the Porcelain Enamel and Manufacturing Company, Baltimore, Maryland, president and vice-president respectively; John A. Frey, of the Detroit Stove Company, vice-president; A. B. Moran of the Peninsular Stove Company, secretary and treasurer; Joseph Hoehl, of the Wolverine firm, assistant secretary. Directors other than those mentioned above are: W. Graham Boyce, Francis Palms, A. B. Dwyer.—*C.I.*

* * *

It is interesting to try to imagine what our big cities will look like, in future years when they become more and more crowded. Therefore we are reprinting the illustration on the opposite page, from Industrial Digest magazine, showing what a very well-planned city of coming years may look like.

* * *

ENAMEL CHEMIST for sheet steel or cast iron, wishes employment. Expert in this line of work. Write Julius Knapka, 2754 E. 92nd St., Cleveland, Ohio.

* * *

Charles Henry Coit, founder of The Cleveland Stamping & Tool Co. died at his home in Cleveland, Ohio on April 27th.

* * *

The Northern Ohio Section of the American Ceramic Society meets at Cleveland, Ohio on May 13th, in connection with the National Chemical Exposition.

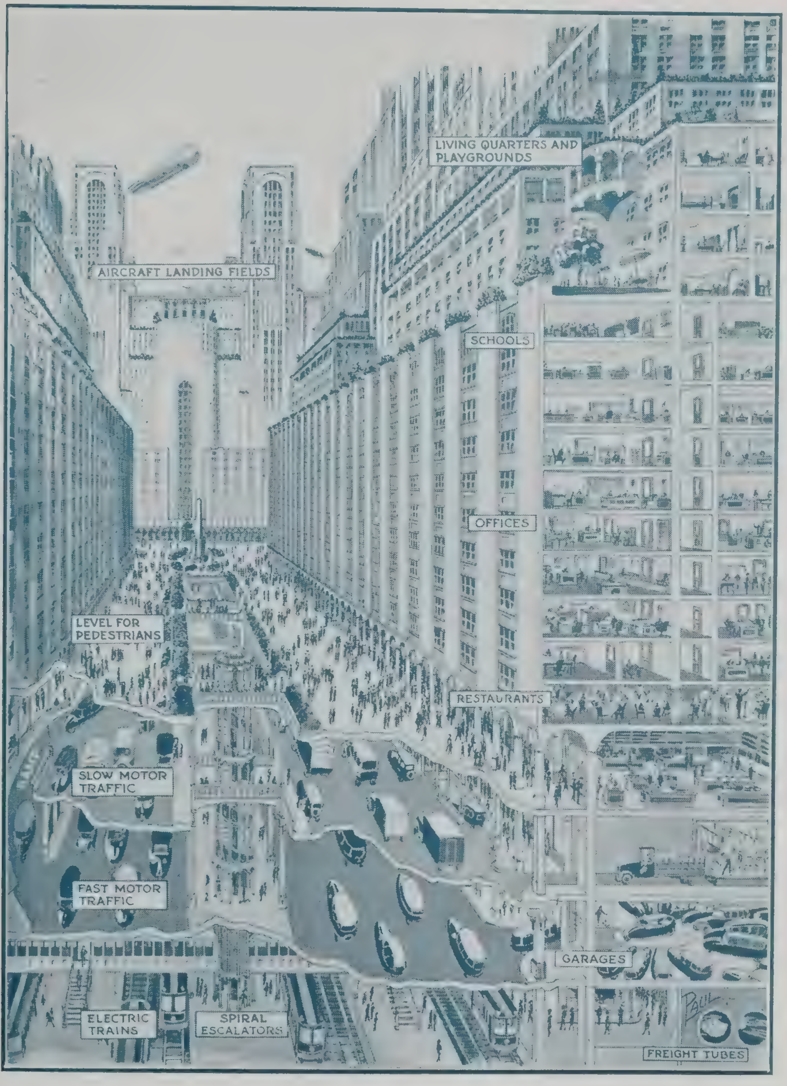
* * *

A recent "Trade Winds" states that in this country there are 267,500 homes having electric ranges and further, that electric stoves have only covered 1% of their market.

* * *

The Charleston has been prohibited at the court balls in Bulgaria.
The throne there is shaky enough already.—*Life.*

The idea is one part, getting the boss to O. K. it is three parts.



What has become of the old fashioned girl with the cotton stockings?

ASBESTOS PRODUCTS
for Enameling and Allied Industries

Asbestos Fibre
Asbestos Yarn
Asbestos Cord
Asbestos Thread
Asbestos Cloth
Asbestos Clothing
Coats
Pants
Aprons
Mittens
Gloves
Patches

This is the famous reinforced mitt which is being used by the biggest enameling companies in the business. In a comparative test it lasted 100 hours longer than the next best mitt. Let us send you a trial pair.
Also furnished in reversible style, re-inforced both sides.

High Temperature Insulation for Hurricane Dryer and other makes.

High Temperature Blocks also 85% Magnesia Blocks.

Write for descriptive list and prices of full line.

Keasbey & Mattison Company
AMBLER, PA.
Cleveland Office
1160 West 11th St.

The Largest Plant of its Kind in the World.
If it's made of ASBESTOS we've got it!

The Ideal Foothold For Vitreous Enamel

Flint-shotting—"sandblasting, *plus*"—gives the metal a velvety matte' finish—ideal for *holding vitreous enamel and plating.*

REMOVES OLD ENAMEL QUICKLY

Enamelers also find it highly effective in the speedy removal of old enamel.

SAVES AIR—ALWAYS

In all kinds of work, Flint Shot *saves air,* as compared with all other abrasives—metallic or mineral, and air is the largest cost-item in sandblasting or shot-blasting.

This, we are prepared to demonstrate—anywhere, any time.

Write for our Liberal Trial Offer

UNITED STATES SILICA Co.
122 South Michigan Ave. Chicago

The only difference between a girl chewing gum and a cow chewing its cud is that a cow usually looks thoughtful.

Bits of Frit

DEFERRED SINE DIE

A woman lay very ill. Having brought up a clever orphan girl, the sick woman called the orphan to her and said: "I shall soon leave my little children motherless. They know you and love you, and after I am gone I want you and my husband to marry."

The young woman, bursting into tears, said: "We were just talking about that."

The wife recovered.—*Wheeler Man.*

ANSWERED

She—"Don't you think it's always difficult to tell a woman's age?"

He—"It is for her."—*Boston Transcript.*

* * *

Father—"Can you support my daughter as I have?"
Suitor—"I could, but I am not that stingy!"—*Life.*

A WEE BIT OF SCOTCH

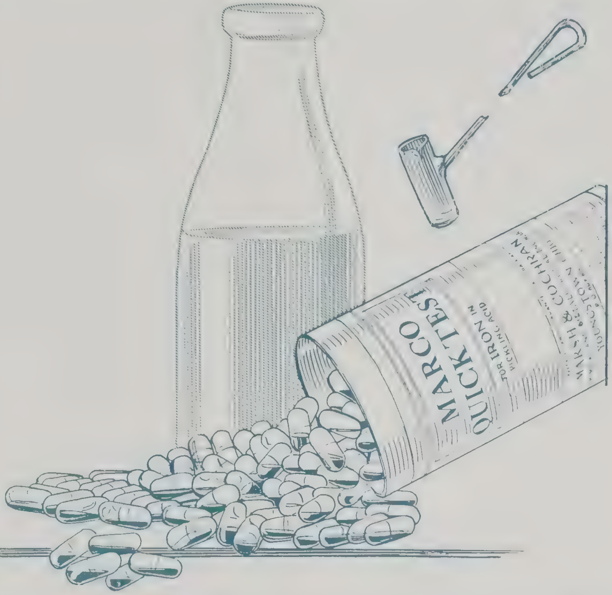
"My mither sent me to see if ye could gie her a calendar like the one ye gied to Mrs. Mackay," said the little boy to the village grocer.

"Ah, but, laddie," replied the grocer, "your mither doesna get her groceries here."

"No," was the reply, "but she borrows them frae Mrs. Mackay and Mrs. Mackay gets them frae ye."

—*The Country Gentleman.*

Every day in every way they do less work and draw more pay.



Use those Pickle Pills you bought from us. Check the strength of acid, the iron content and neutralizer *Every Day*. A few cents spent for Pickle Pills will save dollars in your enameling department.

Here's a positive chemical test that your Pickler can easily make every day. Bad pickling is a sure cause of trouble.

Write for Special Booklet

The Ferro Enamel Supply Company

Cleveland, Ohio

In marriage he who hesitates is bossed.

THE LIBIDO

He was the most nervous, high-strung man imaginable. He had a noise complex. If the baby cried he went downstairs and shut himself away. He walked out of the house if his daugher started to practice her music lesson. He discharged the servants if their shoes squeaked. He fired his chauffeur if he ground the gears. He wouldn't have a typewriter in his office and he had his telephone bell muffled. A back-explosion on a truck completely unnerved him. And yet—he would stand indefinitely and watch a riveting machine in action.—*D. H. B.*

* * *

TRUTH IN ADVERTISING?

Japanese advertisers evidently believe in lavish uses of similes.

"Step inside!" is the invocation of a big department store in Tokyo. "You will be welcomed as fondly as a ray of sunshine after a rainy day. Each one of our clerks is as amiable as a father seeking a husband for a dowerless daughter. Goods are dispatched to customers' houses with the rapidity of a shot from the canon's mouth."

A grocer proclaims that his "superfine vinegar is more acid than the tongue of the most fiendish mother-in-law."—*The Ad Pointer.*

* * *

"That isn't gneiss," said the geology prof. as a student threw a rock at him."—*Yale Record.*

* * *

REASONABLY GOOD SERVICE

"My new housemaid is a treasure," declared Mrs. Johnson. "I had a bridge party the other evening, and one woman failed to turn up. You know how it is—she gave me no notice whatever."

"Very annoying."

"The housemaid, however, put on one of my gowns and fitted in beautifully."

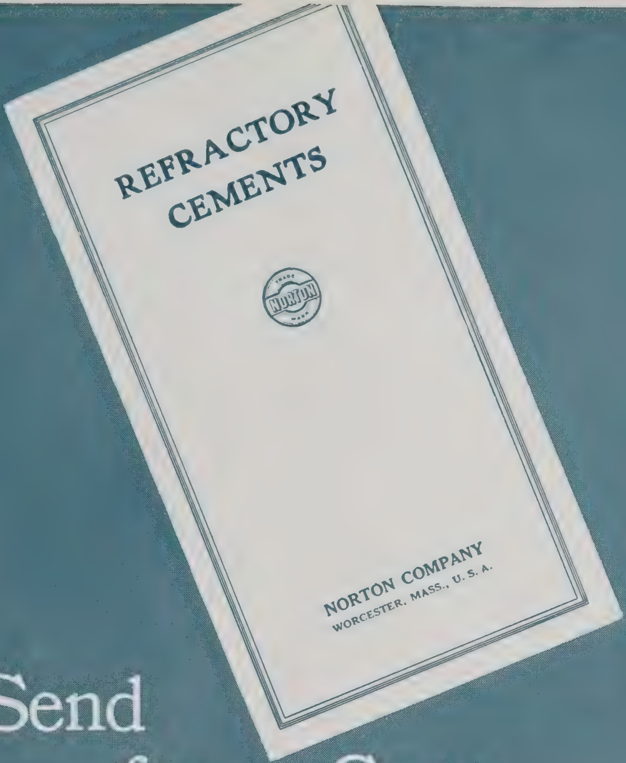
"That was helpful."

"Yes, and I won her week's wages."—*Tid-Bits.*

* * *

A police regulation posted up in Ireland reads as follows: "Until further notice every vehicle must carry a light when darkness begins. Darkness begins when the lights are lit."

Poverty and a cough cannot be hidden.



Send
for a Copy

of this new leaflet on Refractory Cements. It contains interesting and useful information regarding the various Norton cements and their properties. It specifies the type of service for which each is suited and tells how to apply them.

NORTON COMPANY, Worcester, Mass.

Mail me, without cost or obligation, a copy of your new leaflet, "Refractory Cements"

NAME..

ADDRESS..

"HURRICANE" DRYERS
For Drying Enameled Ware

You can now dry enameled ware by the continuous conveyor system at a fraction of the cost for labor that older methods required. And the quality of the product is improved as to uniformity, while cost in floor space, steam and power is reduced to a surprising minimum.

STEEL WARE, CAST IRON, STOVE PARTS, TABLE TOPS

All of these are handled to great advantage by the "HURRICANE" Automatic conveyor method. The continuous process of manufacture, applied to drying is effecting one of the biggest economies that have been introduced into this industry.

Facts will be sent you on request

THE PHILADELPHIA DRYING MACHINERY COMPANY

"HURRICANE" Dryers for ENAMELED WARE

Stokley Street above Westmoreland Philadelphia, Pa.

The Ferro
Enamel Supply Company
2100 B. F. Keith Bldg.
Cleveland, Ohio

HURRICANE
Ideal Drying Every Day

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.

"From the Atlantic to Pacific
From Australian palm to Canadian pine"

"ALUMITE"
REFRACTORIES

are daily increasing Enameling profits by reducing maintenance costs and eliminating costly Production interruptions.

"ALUMITE" Muffles, Smelter brick (complete linings for every size of smelter), 9" brick in our various grades. Laying and Coating Mixtures are carried in stock for immediate shipment.

MAY WE ASSIST YOU?

Send for Bulletins Nos. 21 and 22

THE MASSILLON REFRACTORIES CO.

(Founded by W. G. Hipp)

MASSILLON, OHIO

On the Lincoln Highway—Convenient for Truck Delivery

Don't check your enamel burns by the smell

IN the January-February issue of "ENAMELIST" the Editor reports an Oakland, California, enamel burner "who claims it is easy to blindfold yourself and tell whether a piece is burned or not—simply by the sense of smell."

This reminds us of that other editor who was instructing the cub reporter in the nature of news. The editor said: "My boy, if a dog bit a man, that wouldn't be news. But if you should hear of a man biting a dog, that would be news." The superior enameling results derived from the use of pyrometers have established them so firmly in the favor of the industry that to hear of an enamel burner who relies instead upon his sense of smell is real news.

BROWN PYROMETERS and BROWN AUTOMATIC TEMPERATURE CONTROL have largely contributed toward taking "guess" methods out of burning. Resulting improvement in enamel quality has greatly widened the enameling field and has done much to establish the prosperity of its leaders.

Write for useful data on modern pyrometry for enameling.
Catalog No. 15 just off press. Write for your copy today!

The Brown Instrument Company, Wayne Avenue, Philadelphia, Pa., or any of our district offices in New York, Boston, Pittsburgh, Cleveland, Detroit, Columbus, Chicago, Indianapolis, Birmingham, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City or Montreal.

Brown Pyrometers

EN Ceramics

The Enamelist

A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY

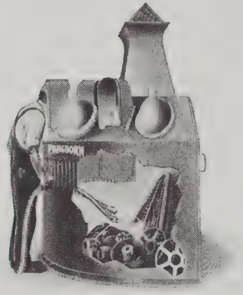
THE LIBRARY OF THE
JUN 19 1926
UNIVERSITY OF ILLINOIS

JUNE, NINETEEN-HUNDRED-TWENTY-SIX

Cut down your rejects

*If your percentage of rejects is high,
look to your cleaning methods.*

Good clean Sand-Blasted surfaces will do more to reduce rejects than any other one factor.



Pangborn
Hygienic Cabinet
Type "EH-1" Direct Pressure
Tables in 6′, 8′ or 10′ diameters
at floor level or 21″ above.

Your product may require a Room, or it may be a Barrel or a Rotary Table.

It's our business to help you to get the biggest output at lowest cost, and Sand-Blasted so that rejects are not due to poorly cleaned surfaces.

With a line that is complete in all types and sizes—we have no hobby to ride for any particular one.

Sixty percent of Pangborn annual volume is repeat business from satisfied customers.

Look over our Condensed Catalog and then talk with us.

Pangborn Sand-Blasts
and Dust Suppression Equipment

Pangborn Corporation Box 853 Hagerstown. Md.

The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

PUBLISHED BY
THE ENAMELIST PUBLISHING COMPANY
2100 B. F. Keith Building Cleveland, Ohio
R. A. WEAVER, EDITOR
Subscription $1.00 a year Copyright Registered Single copies, 10 cents

VOLUME 3 JUNE, 1926 NUMBER 8

Enamelers' Clubs and American Ceramic Society

ENAMELERS have learned the value of co-laboring. This is why Enamelers' Clubs have spontaneously sprung into being and why they are so enthusiastically attended and supported. Enamelers have found that it pays to exchange their bit for the large amount of information each receives from the others.

Enamelers will not be provincial in thought or interest. If it pays to learn by trading information with our own plant fellows, it pays still better to trade information with Enamelers in a neighboring plant and with Enamelers from different parts of the country. It pays too, for the Steel and Cast Iron Enamelers to know the solution of each others' problems.

Enamelers have learned that better quality and lower cost of his business rival makes for better and more certain market; and that comparative business success of rival concerns is dependent more on difference in trade practices and methods and in shop conduct than on differences in quality of wares or shop methods. Universally, good quality of wares does much to stabilize market.

Enamelers have learned that even with the most intimate exchange of information on mixtures and plant methods the relative capacity of concerns to obtain and hold business is in no wise effected.

Enamelers have found it profitable to co-labor, to exchange and to broaden their knowledge. They will not be provincial.

The self-made man usually reveals his creator.

The physics and chemistry of enameling iron and steel with glass are similar and, in many respects, the same as glazing of clay wares and of making glass. Much of the basic information on materials, mixtures and processes in enameling were developed by the glass and glaze workers. Enamelers have found it profitable to know the solution of problems of the glass and glaze makers. It pays Enamelers to co-labor with the Glass and White Ware producers.

Enameling success is dependent on proper refractories. Refractories and the manner of their use are items of importance to Enamelers. The technical men employed in production of refractories have contributed a great amount of information of value to Enamelers.

Enamelers have learned the value of co-laboring with the technical men employed in all Ceramic lines.

Because of much overlapping interests it has been profitable to the Enamelers to be affiliated in the American Ceramic Society with the technical men of all Ceramic Industries and to share in the benefits of a common organization for promoting, collecting and publishing information of interest to workers in all Ceramic lines. The abstracts of the world's literature and the bibliographies which are collected and compiled by members of the Society makes available world wide sources of information to members of the Enamel Division of the Society.

Enamelers are not so provincial as to withdraw unto themselves. They have in the American Ceramic Society a direct contact in a broad way not possible elsewhere and especially if apart. Enamelers clubs are excellent for local contact and frequent "pepping." They will show the benefits of the broader contacts obtained in the American Ceramic Society. We predict a larger and more active affiliation with Ceramists through membership in the national Society as one of the direct results of local Enamelers' clubs.

* * *

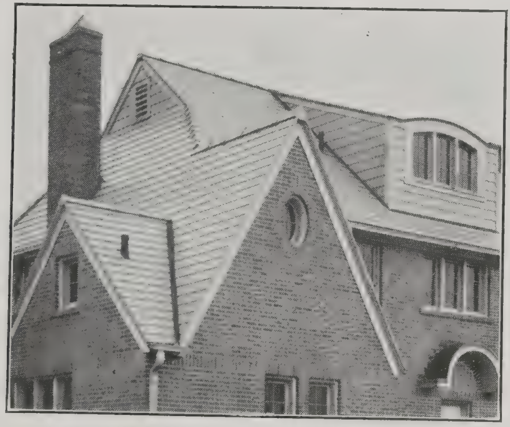
The Summer Meeting of the American Ceramic Society is to be held in Philadelphia sometime in June. Definite announcement will be made soon.

The wages of sin will not be reduced this season.

Sheet Steel Trade Extension
Suggests New Sales Possibilities for the Enameler

THE Vitrified Metallic Roofing Company of Detroit has just completed a porcelain enameled sheet steel tile roof which marks a new epoch in roof architecture.

It will pay anyone interested in sheet steel to study the views of this remarkable roof as shown on our Cover and with this article for they visualize a new market for literally millions of tons of sheet steel.



From an architectural standpoint this new roof material makes possible effects never before obtained. New color combinations are possible in endless variety. The roof shown here is a robin's egg blue which gives a vivid contrast to the tapestry brick of the house walls. One sample of the sheet steel tile recently submitted was in a beautiful salmon pink tone. Instead of the enamel being finished in the usual high gloss, it had more the character of sandstone and the enameler had flowed it across the tile in such a way as to give a somewhat uneven texture which relieved the monotony of the flat surface and gave it an individual character.

Hitch your wagon to a star—stars move.

In 1925 over 43,500,000 squares of roofing were sold. Even one tenth of one per cent of this market represents a business that runs into millions annually.

Roofs are just one of the items where vitrified enameled sheet steel opens tremendous opportunities. Already it is being used for wall linings as has been demonstrated in the Anderson Restaurant, Indiana Harbor, Indiana; in the Atlanta Biltmore Coffee Room, and in the corridors of the London Subways.

Undoubtedly these installations are just steps towards the wholesale adoption of this modern material for use wherever beauty and sanitation are prime considerations.

One outstanding application will undoubtedly be a standardized porcelain enameled sheet steel bath room. By making the room from a series of panels, bath tub, lavatory, and toilet could be made interchangeable. All of the panels could be provided cut to fit, with holes to receive bolts and pipes, so as to simplify the work of plumbing installation. A development similar to this has already been accomplished in sheet steel shower rooms such as are now produced by the Henry Weiss Manufacturing Company of Atchinson, Kansas. These units come with all wall openings necessary to take standard shower fixtures.

* * *

Here's something worth-while that Glenn Frank has written:

"Critics are the advance agents of progress.

An institution through which the clean and antiseptic air of doubt is never permitted to blow is bound to become stuffy.

An individual who never permits his motives or his methods to be severely questioned is bound to become poisoned by that most poisonous of all poisons—self-complacency.

This means for the individual, as I said the other day, that he must be sensitive to criticism without being touchy toward critics.

It means, for the nation, that we must realize that a man can, with entire consistency, defend the rights of a minority, although he differs from and heartily despises its views.

It means further that we must realize that the safety as well as the progress of the nation depends upon our thus defending the right of the critic to criticise."

It is easier to fall for anything than to stand for something.

What's Wrong with the Picture?

Three guesses who this picture is supposed to represent.

Ross Purdy? Wrong!

Cal Coolidge? Wrong!

John Bardush? Correct!

John decides his other accomplishment is being an expert fisherman. Three o'clock in the morning is late for John. He always starts out well stocked with bait in glass bottles. He uses the bottles for sinkers and the corks for floats.

Let us assure you that all of John's fishscales are on the fish. We have it from good authority that John caught all of these fish, single handed before six o'clock in the morning.

Other good fisherman step forward with what you have.

* * *

MORE INSTALMENT BUYING

The increase in instalment sales has been a frequent subject of comment in the past few months, and views pro and con have been freely expressed. It is generally conceded that the plan shows no sign of losing popularity. Automobile acceptance organizations are many, and now another field has been added to the lists of those where this method of stimulating sales is permitted. A large public utility has announced the formation of an acceptance corporation for financing the purchase of appliances sold to increase demand for electric power.

* * *

The Brown Instrument Co. have issued a very fine new catalog on Pyrometry. Copy can be obtained, without obligation, by writing Brown Instrument Co., 4510 Wayne Ave., Philadelphia.

Needed—an amplifier for the still small voice.

J. E. Hansen Joins Ferro Research Staff

THE entire enameling industry will be interested to know that J. E. Hansen has joined forces with the Ferro Enamel organization. He graduated from the University of Illinois in 1920 and had his first experiences in enameling in the Chemical Laboratory of the Benjamin Electric Company, during the Summer of 1918.

For the past 6 years, or since June 1920, he has been at the Mellon Institute of Industrial Research, actively engaged in research and development problems on enamels for both cast iron and sheet iron, for members of The Stove Founders' Research Association. This work has involved not only experimental work on a small scale and on a semi-commercial scale in the laboratory, but also considerable work in the plants of the members of the Association.

In the Enamel Division of the American Ceramic Society, he was Chairman of a Special Committee on Furnaces for Cast Iron Enameling (Wet Process) in 1923-25, and Chairman of the Program Committee for the 1926 meeting in Atlanta. Co-author of "Observations on 'Hairlines' in Sheet Iron Enamels," published in the Journal of the American Ceramic Society in June 1925, and of a paper on "Some Factors Influencing the Rate of Pickling," presented at the Atlanta meeting.

With the addition of Mr. Hansen to their already strong

Hard drinks and hard times go together.

research staff, the Ferro organization today has the largest and most experienced staff of technical men in the enameling industry.

They expect to announce very shortly some very interesting and notable developments that will have a profound influence on the enameling industry.

* * *

The many friends of W. R. (Sam) Samuel of Chattanooga Stamping & Enameling Company, will be interested to know that he severed his connections with that Company, on April first and has organized the Samuel Stamping & Enameling Company with a capital stock of $100,000.00. He is going to start with a two furnace plant and we are sure that it will be modern in every particular.

Sam is one of the real old timers in the enameling business and has been selling enameled parts for a great many years. We doubt if there is anybody in the business who is better or more favorably known. The following are the officers in the new company:—

W. R. Samuel, President-Treasurer.
Harry Howard, of the Rockwood Stove Co., Vice-Pres.
O. T. Tindell, of the Mascot Stove Mfg. Co., Secretary.

We certainly wish the new company every success.

* * *

On May 28, the Ohio Ceramic Industries Association held a meeting in Columbus, to further co-operate with the University in ceramic education and research.

The new Secretary's office at 2525 North High Street was opened informally by a "house party" on the evening of the 28th.

* * *

University of Illinois is sending two of its Ceramic graduates into the enameling industry this year. E. R. Brauner and C. H. Wolff have accepted positions with The Vitreous Enameling Co. of Cleveland. E. H. Watkins, graduating from Ohio State, will become associated with Barnes Mfg. Co. at Mansfield, Ohio, and R. D. Beck of Ohio State will go with Pfaudler Co. at Elyria, Ohio

"Good enough" is not good enough.

Enameling Business Slackens

FIGURES for May show that during the past month our industry was operating at 81% capacity, while in April it operated at 85½%. Seasonal recession is to be expected at this time. General business has been going through a rather lengthy period of readjustment, so on the whole, we can still say we are mighty pleased with what our industry is doing.

"Business is good," writes an Ohio enameling plant. "The first four months of 1926 were the biggest in our history, but there is a falling-off this month," writes a reflector enameling plant. Other comments made are:

"Prospects good for next few months."

"Building new plant."

"Business fair."

"Business better than really expected."

"Working two furnaces 24 hour shifts."

"Business slightly better."

"Working 100%."

In regard to general business, John W. Hill, Financial Editor of Iron Trade Review writes: "Perhaps the most encouraging event of the last month was the fading of the black cloud of threatened economic revolution in Great Britain. The general strike represented the most disturbing development since the world war. The failure of its extreme and radical aims and its unsettling influence removes a potential menace to business enterprise everywhere."

"Furthermore," states Mr. Hill, "Money, in this country, is in superabundant supply. No prolonged drastic depression has ever been ushered in by extremely easy money."

* * *

Fred W. Greenlee of Iowa State will enter the employ of Metal & Thermit Corp., to receive additional training under Homer Staley.

High-flying is never elevating.

Spring, at Cooper Oven Thermometer plant, Pequabuck, Conn.

Although this picture was taken in February, just after a big blizzard, it still shows Cooper Spring, built by the late Mr. D. G. Cooper, founder of the Cooper Oven Thermometer Co.

Mr. H. R. Whittier, Vice-President, writes: "The picture was taken before the highway was broken open for travel. Our little spring house is almost entirely buried under 33'' of snow. This spring was built by Mr. Cooper over twenty years ago, and has since been made good use of by motorists and the folks living around here.

The water has been analyzed by the State Board, and proved to be very excellent. During the Summer, when city waters become rather turbid, this is the only water we can safely use for overglaze work, as it is practically free of iron and other elements which will cause discolor in overglaze. We've also used it for washing our enamels, with perfect results."

* * *

FOR SALE—One Set of 30 Porcelain Enamel Formulas. All colors for Sheet and Cast Iron, in Powder and Liquid form; inquire Eugene Wuerz, 1609 St. Paul street, Baltimore, Md.

High-hatters are often the low-brows.

Notes on Color of Antimony Enamels

By M. E. MANSON
Rundle Mfg. Co., Milwaukee, Wisconsin.

Reprinted from Amer. Ceramic Society Journal

BOTH Staley and Shaw have discussed the question of color control in antimony enamels but neither specified the source of the antimony oxide used in their experiments. The results of an investigation of mine lead me to believe that this is an important point in any discussion of this subject.

A few years ago there was an enamel in use at our plant, which derived its opacity from a mixture of tin and antimony oxides smelted into the frit. The odd thing about the formula was the extremely low percentage of opacifier used, in spite of which the opacity of the enamel was very good. The enamel was of the high head type and contained less than 5% total tin oxide plus antimony oxide. The tin was present in such a small amount that it must have been completely dissolved in the frit, producing no opacity whatever. What there was, evidently came from the small amount of antimony oxide present, plus the fluoride capacity.

The particular antimony used in this enamel was a domestic oxide. I believe there is only one domestic source for this material. Since the purchasing department did not wish to be confined to one company on any material, we tried, at various times, to substitute Chinese oxide, supplied by various companies. Every such attempt was a failure, the resultant enamel being a decided blue white of low opacity, instead of its usual opaque cream color. This was the more strange because the domestic oxide was a very impure product containing only about 92% oxides of antimony and varying in color between light gray and slate gray while the Chinese oxide was pure white and contained about 98% of the oxides. The problem presented therefore was to find if possible some way to get the same results with pure antimony oxide as with impure.

Chemically there are three oxides of antimony, represented by the formulas, Sb^2O^3, Sb_2O_4, Sb_2O_5. I believe the ordinary commercial product, while it contains all of these oxides in varying amounts, consists principally of the trioxide. There is probably a difference in the opacifying power of the three oxides, increasing as the degree of oxidation increases, although I know of no work done to prove this. Unfortunately, I have been unable to find any methods of analysis of antimony which allow the quantitative determination of these three oxides. Since all three oxides are present in the commercial oxide, it is impossible to determine the per cent of metallic antimony present and calculate from that the per cent of oxide.

All three oxides are however soluble in hot concentrated hydrochloric acid, so that by determining acid insoluble, water soluble, and iron and sulphur in the acid soluble material, the total antimony oxides can be determined fairly well by difference.

In the following experiments, two kinds of material were used. One, a Chinese oxide, called "C" hereafter, contained 98% antimony oxides, 1.5% water soluble material and 0.5% acid insoluble. The other, a domestic oxide, called "S" hereafter, contained 91% antimony oxides, 7% acid insoluble, 1.5% water soluble and the remaining 0.5% consisted of iron and sulphur. The sulphur is from unoxidized Stibnite. All smelts were made in Battersea crucibles in the laboratory. The parts of materials used were equivalent to pounds in the factory smelter. A smelt of our regular enamel using "S" antimony was made first as a standard.

SERIES I—Effect of varying amount of antimony oxide. It was possible that, being so much purer, less of the "C" oxide should be used or that, being of a different physical structure, it was more readily dissolved in the frit, and more should be used.

Test 1—Standard formula without change, using eleven parts antimony. An enamel with a blue green tint and poor opacity was obtained.

Test 2—Nine parts antimony—no other change. Result the same as Number 1.

Test 3—Five parts antimony. Same color as 1, slightly poorer opacity.

Test 4—Eighteen parts antimony. Same color as 1, but with slightly better opacity.

SERIES II—Effect of omitting tin oxide. Enamelers have noticed that when tin oxide and antimony oxide are smelted together in the same frit, a blue color results. "C" oxide used.

Test 5—Fifteen parts antimony, no tin. Enamel was greener than 1.

It is much eaiser to be critical than to be correct.

SERIES III—Effect of varying calcium content. Staley in a series of experiments showed that when both antimony and lead oxides were present in an enamel, a brown coloration was produced. The addition of calcium either as fluorspar or whiting produced a blue color which neutralized the brown. Therefore in this case, we might expect to lessen the blue color by reducing calcium. The usual eleven parts of "C" antimony were used.

Test 6—Seven parts of whiting were cut out and in its place two parts borax and four parts soda ash added. Resulting enamel was about the same as No. 1.

Test 7—Fourteen parts of fluorspar removed and sodium fluoride substituted• This gave a very yellow enamel, entirely different in color from No. 1› yellower than the standard.

Test 8—Seven parts of fluorspar removed and sodium fluoride substituted. This enamel was not so yellow as Test 7, but yellower than the standard.

Evidently calcium, at least as fluorspar, affects the color, but no change in fluorspar was sufficient to produce the opaque cream color of the standard. Test 11 was too blue, but Test 8 was too yellow, and neither sample showed the required opacity.

SERIES IV—Effect of increasing sodium nitrate. It is possible that the Chinese oxide contains considerably more Sb_2O_3 and less Sb_2O_5 than the domestic product. Therefore an increase in the oxidizing effect during smelting might help.

Test 9—The sodium nitrate was increased from 16 to 21 parts, while a reduction in soda ash kept the Na_2O content the same. The resultant enamel was bluer than the standard but not as blue as Test 1. Opacity poor.

At the time these tests were performed, I went no further along this line. It seemed possible that a large increase in sodium nitrate might have produced a cream white, but the resultant enamel would have probably had so much soda in it that its luster and workability would have been impaired.

SERIES V—Effect of small amounts of impurities. Since our best results were obtained with an impure oxide, it seemed possible that some of the impurities might be the cause of the good color and opacity. The standard formula called for eleven parts of domestic antimony. The amounts of various impurities added to the batch by this antimony were calculated, and were then added to batches made of "C" oxide.

Test 10—Regular formula plus 0.2 part of sulphur. This enamel was very green.

Test 11—Regular formula plus 0.5 part iron sulphide. Same result as Test 10.

Test 12—Regular formula plus 0.5 part manganese dioxide. Enamel slightly greener than Test 1.

Test 13—Regular formula plus 0.4 part iron oxide. Enamel had same appearance as Test 12.

Test 14—A large amount of our domestic oxide was dissolved in concentrated hydro-chloric acid, filtered, and a quantity of the acid insoluble material obtained. This was tan colored, and analysis revealed a siliceous material containing about 60% SiO_2. No attempt was made at a complete analysis. A smelt was made of the regular formula plus 0.7 part acid insoluble. The resultant enamel had a brown tint, browner than the standard. A fair enamel.

Test 15—Regular formula plus 0.5 part acid insoluble. Enamel was greenish.

Test 16—Regular formula plus 0.9 part of acid insoluble. Enamel was too brown.

The above series showed that the insoluble material in the domestic antimony exercised a decided effect on the color of enamel. Test 14 was the closest approach to the standard of any of the tests, but it still left much to be desired. Knowing that different shipments of this antimony varied between 5 and 10% of this material, it is easy to understand why different lots of antimony give different colored enamels.

SERIES VI—Test 17—Regular formula, using a French process antimony oxide over 99% pure. The enamel was exactly like Test 1 blue.

The above experiments convinced us that we could use only one kind of antimony oxide in our formula. We still cannot say definitely what causes the difference in the color produced by the impure domestic oxide and the relatively pure Chinese oxide. The solution may lie in colloid chemistry. In 1923, in an article entitled "The Industrial Outlook for Colloid Chemistry" by H. N. Holmes, he made the following statement:

"Since ions exist in melted salts there is a possibility that certain ions in a melted glass or enamel may peptize a pigment added to the melt. The composition of enamels might be changed so as to introduce desirable ions or even protective colloid material. Coagulation by ions may also merit study in such systems."

What you'll become tomorrow depends on what you do today.

The "Savory" Roaster

During McKinley's administration Gustave Biscaye was the chief chef of the White House. It was he who prepared the president's roasts which had won fame throughout the land. He prepared these roasts in a remarkable roasting pan, which was then just beginning to attain great popularity in the kitchens of the Embassies and the homes of Washington's social leaders.

This roasting pan was called the "SAVORY" roaster. The "SAVORY" roaster was the invention of one Joseph Mathy, a sheet metal worker in the capitol city. He had discovered the principle as early as 1883 and made up a few models in his own workshop. Then followed years of experimentation during which time he constantly improved the construction and increased the production of the roasters and it was not until about 1882, five years before McKinley was inaugurated, that Mr. Mathy began to sell these roasters to any appreciable extent. He soon found, however, that his limited manufacturing facilities were far too small to supply the growing demand. He stopped making these roasters by hand and arranged with Sidney Shepard & Co., manufacturers of kitchenware since 1836, of Buffalo, N. Y., to produce them for him on a larger scale.

Sidney Shepard & Co., later incorporated as the Republic Metalware Co., with the aid of extensive national advertising have sold over 3,000,000 "SAVORY" roasters up to the present time, it is said.

The secret of preparing successful roasts was aimed at in the "SAVORY" Roaster. Mr. Mathy discovered that when meat is roasted in a receptacle of proper design the juices which vaporize during the roasting process will condense, not on the hot cover of the roaster, but on the meat itself. Thus the meat is thoroughly basted and properly browned without requiring any attention from the cook.

In naming his invention Mr. Mathy had in mind the old Biblical narrative of Jacob and Essau and the "Savoury meat such as his father loved." Webster has defined the word as "pleasing to taste or smell." So the more modern spelling was adopted and the invention was christened the "SAVORY" roaster.

The fewer the facts the better the argument.

Patterson Pebble Mills
in a large plant at
Stamford, Conn.

The Patterson Foundry & Machine Co.
Richard L. Cawood, President
Builders of
Satisfactory Machinery
East Liverpool, Ohio

Opportunities always look bigger going than coming.

The first enameled Savory's produced by Republic were made by Mr. E. L. Stine, who had charge of the department. Since then practically their entire line is finished in porcelain enamel.

* * *

Here's a poem that our stove friends will enjoy. It was contributed by our Middletown, Pa. correspondent:

The STOVE is sure a funny thing,
With LEGS upon the floor;
As it forever smokes it's PIPE,
And blows it thru the DOOR.

It never seems to use it's HEAD,
Wherein it's BRAIN is hid;
Because it doesn't wash it's FEET,
Or even brush it's LID.

But seldom does it sprain a LEG,
Or ever scratch it's BACK;
For should it bend it's NECK, I fear
It's ELBOW sure would crack.

Sometimes it does get rather HOT,
Tho RIDDLES it will get;
And if your wife the DAMPER shuts
Why it may POK-ER yet.

It has a DRAFT that's strong enuf,
To LIFT-ER when it's mad:
And make her kick the BUCKET when,
It has the POKER bad.

* * *

American Gas Assn. Annual Convention is to be held in Atlantic City on October 11th to 14th this year.

The Verdict of Use

A larger tonnage of stove parts, bathroom fixtures, sanitary plumbing and other enameled products, produced in the United States and Canada is sandblasted with FLINT SHOT, than with any other abrasive—metallic or mineral.

The truth of this statement would not be questioned by anyone who checked our list of customers against the total tonnage of enameled products produced on the North American continent.

The exchange of experiences among Production Executives of leading Enamelists; and the gratifying results of tests made, on our *Free Trial Offer,* are largely responsible for this widespread use of Flint Shot by the progressive leaders in this craft.

Manufacturers who have the courage to buy abrasives on the basis of ultimate economy, rather than first cost, are the best friends that FLINT SHOT has.

FREE TRIAL OFFER

Let us send you FREE, as many 150 lb. bags of Flint Shot as you will require for a thorough working test. We also prepay freight within 1200 miles of our plant at Ottawa, Ill.

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

The following system for de-enameling refrigerator linings is being used with great success by some of our friends who are producing porcelain enameled boxes:

They have an extra acid tank in their pickle room. Into this tank they dump their spent acid from their regular pickling acid tank and in this way utilize this acid in de-enameling of any scrap boxes which they may have. They keep this acid at 150 deg. F. and at this temperature it will take about 14 hours to de-enamel a scrap enameled lining. If at the end of 14 hours the enamel is not entirely loose from the lining, a real light touch from the sandblast, using fine sand, will completely take the balance of the clinging remnants of the enamel clean from the box. In several stove plants throughout the Country it is the general custom to let this scrap accumulate and then just before they are ready to empty their acid tank and fill it up again with new acid, they load a pickle basket full of their scrap and put it into the tank at night. After an emersion of twelve hours in such acid which runs between five and seven per cent at 150 deg. F. the enamel is pretty nearly entirely eaten off. Any enamel which is left is quite quickly removed with the light touch of the fine sand from the sandblast. After the piece is de-enameled it is annealed and then run through the regular pickling process preparatory to enameling.

It would be very practical to have an extra de-enameling tank in any pickle room in the enameling industry today. With this extra tank one could make use of the spent acid which still has plenty of strength for de-enameling, but which would be nothing but waste to throw away. De-enameling with sulphuric acid between five and seven per cent is rather a slow process, but to date we know of no other safer way than this.

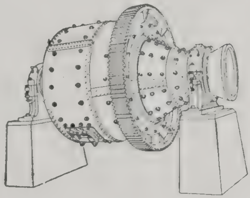
* * *

PACK FRUIT IN ENAMELED CONTAINERS

Packing of strawberries and beets, which has heretofore offered considerable difficulties because the acid in the strawberries would attack the tin plate and the beets lost their color, has now been satisfactorily solved by enameling the inside of the containers, it is reported.—*Ceramic Industry.*

Real happiness is cheap, yet how dearly we pay for its counterfeit.

Grinding Clay a New Way



At the St. Louis Terra Cotta Company, a Hardinge Conical Ball Mill and Air Classifier is grinding clay.

The method employed is different than old standard practice. Undried clay is pulverized to 90% passing 80 mesh. The unit is dustless. Grinding, and conveying to bin, is done in one operation.

Write for further details.

Are you receiving our Weather Forcast?

HARDINGE COMPANY
YORK, PENNSYLVANIA
WORKS AND MAIN OFFICE YORK, PENNA.
BRANCH OFFICES
NEW YORK, N.Y., 120 BROADWAY
SALT LAKE CITY, UTAH; NEWHOUSE BUILDING
CABLE ADDRESS HARDINGMILL NEW YORK

Most controversies have two sides.

This is not John Barrymore and H. B. Warner, but "Mac" McFadon, and Ben Hale, of The Ferro Enameling Company.

Mac and Ben are evidently having a conference.

* * *

Just a few young fellows, out for a ride.

This picture was taken in Cleveland, back in 1906. Left to right are, Henry Oesterle, of Belleville, E. Karafiat, at that time probably with Coonley's, and B. DeVorak, who is now with the Crown Stove Works.

* * *

We are pleased to announce the birth of a fine baby boy to Mr. & Mrs. Fred Jansen. Mr. Jansen is the foreman of the Burning Department at the Wrought Iron Range Co. of St. Louis.

Don't expect your ship to come in unless you send one out.

Why Toncan is Preferred

Makers of Toncan Metal realize that the enameler's requirements are of a special nature. Every precaution necessary to produce an enameling base which will meet these exacting requirements is exercised in the manufacture of Toncan.

This skillful, specialized treatment is reflected in the results the enameler gets. Actual experience in hundreds of instances show that rejections in the case of Toncan Enameling Stock are very small. Manufacturers of enamelware prefer Toncan Metal because it insures the highest possible percentage of perfect enameled parts.

If you are not familiar with Toncan, test it in comparison with the metal you are now using. This test will readily explain why Toncan is preferred.

For Better Enameling —

TONCAN METAL

United Alloy Steel Corporation, Canton, O.

New York	Philadelphia	Chicago	San Francisco
Syracuse	Pittsburgh	Detroit	Indianapolis
Cleveland			Portland

TONCAN ENAMELING SHEETS

ORGANIZATION M

IN THE MODERN INDUSTRIAL WORLD there is very little room for the Jack-of-all-Trades. Business is too big and too competitive to depend on individuals.

Consequently, FERRO, as leader in the Enamel Supply industry, has built up the most powerful organization in this line of business.

We have recently designed and installed the most modern enameling plant ever built. A continuous plant, which enamels each steel part with a ground coat and two white cover coats, completing the job in three hours and fifteen minutes. To do this requires continuous dryers, conveyors and other special equipment designed by us.

The Ferro Enamel Supply

ANS *EVERYTHING*

In addition, we found time to build three large continuous Rotary furnaces, designed by Mr. Manion. Also to build a plant for one of the best known refrigerator makers.

In the midst of this an old customer needed a new furnace, so we turned in and completed a 5′ x 12′ furnace in five weeks.

While all this regular business goes on, we take time to design, experiment, and develop new equipment, new methods, new enamels.

Porcelain Enameling Has a Wonderful Future — The Rapidity of its Growth is Amazing. Ferro is Growing With It — in Fact, is Always a Few Steps Ahead.

ompany, Cleveland, Ohio

It is our belief that the characteristic spots which sometimes occur in dry-process enamels are largely due to a ground coat which is not refractory enough, and over-burns when the subsequent cover coats are applied, and the over-burned portion of the ground coat floats into the cover coat, thus producing one kind of black spots.

Another kind of black spots can be caused by water coming in contact with iron, and this may be atmospheric water, and this generating hydrogen has a by-product of the formation of iron oxide. This hydrogen is imprisoned in the enamel and when subjected to high heat expands, causing a bubble which breaks and does not heal over, thus leaving either the iron or the dark ground coat exposed.

We appreciate that possibly the condition in the dry process would not create this latter condition, but it is very prevalent in wet process work.

Of course, factory contamination is always possible, but it is surprising to see how little a handful of your floor sweepings added to your enamel would contaminate the enamel.

~~~

DO YOU REMEMBER?

When eggs were 3 dozen for 25c,

Butter was 10c per pound,

Milk was 5c per quart,

The butcher gave away liver and treated the kids with bologna,

The hired girl received two dollars per week and did the washing,

Women did not powder and paint (in public), smoke, vote, play poker, or shake the shimmie,

Men wore whiskers and boots, chewed tobacco, spit on the sidewalk, and cussed,

Laborers worked ten hours a day and never went on strike,

No tips were given to waiters, and the hat check grafter was unknown,

A kerosene hanging lamp and a stereoscope in the parlor were luxuries,

No one was operated on for appendicitis, or bought glands,

Microbes were unheard of,

Folks lived to a good old age, and every Sunday walked miles to church?

Today, you know, everybody rides in automobiles, or flies, plays golf, shoots craps, plays the piano with their feet, goes to the movies nightly, smokes cigarettes, drinks ruckus juice, blames the H. C. of L. on the republicans, never go to bed the same day they get up, and think they are having a wonderful time.

Money's best gift is independence.
~~~

A1 .... Quality

THE growing demand for *A1 Ceramic Chemicals, Minerals* and *Oxides* is the logical result of the care we take to have them good.

The purity of our products is an outstanding feature and linked with efficient service assures the trade of *Quality*.

REG. U.S. PAT. OFF.

R&H

A1

CERAMIC CHEMICALS
MINERALS, OXIDES
and
SERVICE

The
ROESSLER & HASSLACHER CHEMICAL CO.
709 SIXTH AVENUE NEW YORK CITY

Chicago
Boston

New Orleans
Cleveland
Trenton

Pittsburgh
Baltimore
San Francisco

Philadelphia
Kansas City

"America's Leading
Ceramic Material House"

As a result of a certain experience, we believe it behooves every enamel plant superintendent to check up the foundry superintendent and find exactly how much foreign scrap is going into the castings to be enameled. It was the writer's privilege to prove, in this instance, that by using nothing but the scrap from the floor of the foundry and fresh pig perfect enameled castings could be produced. Out of a clear sky, apparently, the production of the foundry for the enamel plant seemed to decrease in quality, resulting in the writer's enameled castings being sent back to the sand blast. Upon re-sand blasting and re-enameling there was no change in the appearance of the enameled castings so that the writer was sure that dirty castings was not the cause for his trouble. After a lengthy discussion with the foundry superintendent it was finally decided to put out a day's production with nothing but straight pig. This was done and not one single piece of that day's production was lost in the enamel plant and not one piece was rejected upon final inspection by the Stove Company inspector. This, the writer is happy to say, proved to his satisfaction and the foundry superintendent's satisfaction that it was not the enamel that was faulty, but the casting which had been made largely of foreign scrap.

* * *

STUDENT BRANCH OF AMERICAN CERAMIC SOCIETY AT NORTH CAROLINA STATE COLLEGE

The Student Branch of the Society which was organized in 1924 has just completed a very successful year under the guidance of President Stanton Hardee. The branch met regularly each month and the attendance was always large. Lectures on ceramic subjects by members of the faculty, and clay workers of the State and moving pictures of ceramic processes made up the programs. The organization also took an active part, in fact was one of the leaders, in the formation of an Engineering Council at the college. This council is made up of representatives of all the local student branches.

* * *

The balance sheet of the Ford Motor Company for the year ended December 31, 1925, carries no charge for the item of good-will, which would indicate that this item has been written off its books. In the company's balance sheet for the previous year, good-will was carried at a valuation of $20,517,985.

As far as the public is concerned a strike is never a hit.

They Are Using It

With more than a 50 per cent saving in the cost of their Opacifier—what a tremendous sales advantage in better profits or less worry about competition.

These are facts

Today six plants are using Opax for every plant that used it a year ago.

Today the industry is using Ten Tons of Opax for every Ton it used a year ago.

TAM
OPAX

The Titanium Alloy Manufacturing Co.

Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT
R. D. Landrum, *General Manager*
6007 Euclid Avenue CLEVELAND, OHIO

Optimism defies the law of gravitation.

BAD BUSINESS

? ? ? ? ? ? ? ? ? ? ? ?

IN May we made the biggest shipments of any May in our history.

We shipped more enamel in the first five months of 1926 than our total shipments in 1923.

Shipments for the first five months of 1926 were 25% greater than the same period in 1925.

Enamel plant and furnace building for the first five months of 1926 were greater than all of 1925.

Bring on some more bad business!!

"Buy from Bob"

The Ferro Enameling Company
Cleveland, Ohio

Electricity vs. Oil

SEVERAL years ago a large sanitary ware manufacturing concern installed an electric furnace for enameling bathtubs, and we beleive our readers will be interested in the report on this furnace, as published in the Journal of Electricity by H. A. Mulvaney, Designing Engineer of Electric Sales Service Co., Berkeley, Calif. Mr. Mulvaney writes:

"This furnace was an experiment, having been built in the muffle of an old oil-fired furnace to check computed figures on radiation and conduction losses and to demonstrate the possibility of using an electric furnace in this industry. The experiment was sufficiently gratifying to warrant the construction of a permanent electric furnace for enameling tubs. The first furnace was of 150-kw. capacity, capable of operating continuously at a temperature of 1,800 deg. F. The design of this furnace has been modified only slightly in subsequent furnaces, and the electrification of this enameling room has continued until it has a load in enameling furnaces of 1,350 kw.

The process of enameling a tub starts with the spraying of the thoroughly cleansed and sand blasted casting with a so-called "ground coat" which consists of a suspension in water of powdered glass, clay and other materials. When the "ground coat" has dried the tub is placed in the furnace, which is heated to a temperature of 1,800 deg. F. until the ground coat is thoroughly fused, forming a thin layer of transparent glass on the casting. This operation takes fron seven to ten minutes. The tub is then withdrawn from the furnace and immediately coated by means of long handled sieves with a layer of opaque white powdered glass, known as the "cover enamel." After having cooled to about 800 deg. F., the tub is returned to the furnace for three minutes, during which time the cover coat fuses to a smooth layer. A second cover coat is applied in the same manner and the tub is again withdrawn and inspected, and if it is free from bubbles and blow holes it is allowed to cool as a finished article.

Cast iron enameling, previous to this installation, had been carried on in this plant in oil-fired muffle furnaces. In the muffle oil furnace, combustion takes place under the floor in the flues. The combustion gases pass up and around the muffle, which is made of cup brick to facilitate conduction, and into the stack, and do not come in contact with the ware. The undesirable features of such a furnace are its rapid rate of depreciation, its inability to maintain uniform temperature, and its uneven floor due to the sagging of its fire box. The cause of this last defect is that to maintain a temperature of 1,800 deg. F. in the muffle, the temperature in the fire box is above the working limit of ordinary refractories. The destruction of such a furnace is quickened further by the impact of a 240-lb. tub on the floor nine or ten times per hour. The floor in such a furnace consequently begins to sag the first week of operation and has to be replaced within four to eight weeks. The rail of the buck upon which the tub is placed, will follow the uneven floor, and if the tub is not uniformly supported, it will warp.

He is doomed to failure who takes the right tool by the wrong end.

This defect in an oil furnace can be readily overcome in the electric furnace; but the electric furnace presents difficulties of an entirely different nature. The first requirement is that the temperature of the muffle must be held at 1,800 deg. F. To maintain such a temperature nickel-chromium is the most desirable material for the electric element. Previous experience with this alloy has demonstrated that in large cross-sections it can be operated for a number of years at a temperature of 1,900 deg. F., but if this temperature is exceeded in any part of the element, frequent replacements will be necessary. Since replacement of an element requires the cooling down of the furnace to a temperature at which it may be entered, it is quite evident that frequent replacements would cause costly shut-downs and would make an electric furnace impossible in this industry. Another difficulty to be confronted is the frequent breaking of a tub within the furnace. The elements have to be protected so as to prevent the broken ware from coming in contact with them, or a low enough voltage applied to the elements to prevent serious difficulty.

For the purpose of comparing the production from each type of furnace, the standard 5-ft. tub only is considered, but the results obtained in tub production could be assumed to approximate the same proportion in other kinds of work done. The average number of 5-ft. tubs obtained from an oil-fired furnace in the plant described above was eighteen per 8-hour shift. When this average was increased the life of the furnace was greatly decreased, In comparing these results with those obtained in other plants, by referring to the U. S. Department of Commerce Bulletin No. 142, by Homer Staley, page 159, it may be found that the time allowed on tubs weighing between 200 and 300 lb. was 30 minutes, or a production of 16 tubs in eight hours. Due to the low temperature in the front end of oil furnaces, it is common practice to remove the tub during the first heating to rotate it. This operation is not necessary with the electric furnace because of the even temperature maintained throughout, and therefore at least two more tubs per shift can be obtained from an electric furnace.

To arrive at the cost of maintenance of the electric furnace it is assumed that it will be necessary to replace all the heating elements in three years, and the maintenance and depreciation on this type of furnace has been placed conservatively at $37.50 per month. The useful life of an oil furnace is three years and its cost is $3,000. Replacement of the floor is necessary six times a year, at a cost each time for labor and material of $130. The total depreciation and maintenanace, therefore, is about $150 per month. Furthermore, since the oil furnace floor warps and settles within the first week of operation, and since heating the tub slightly above the desired temperature causes it to take the shape of the supports, there is great danger of obtaining warped ware from such a furnace, and there must be added to the costs a loss covering this warpage. After considering reports by other investigators treating this subject, this loss has been placed at $60 per month.

The cost per tub, therefore, on each type of furnace, using the price of oil at $1.40 per bbl., and of electricity at 8c. per kw-hr., is figured as follows:

Oil consumed per 24-hr. operation of tub furnace	11 bbl.
Oil consumed per 24-hr. for atomizing	2.5 bbl.
Total consumption for 24-hr. period	13.5 bbl.
Oil consumed in 25 working days per month, 13.5 x 25	337.5 bbl.
Oil consumed in 4 Sundays per month, 8 x 4	32 bbl.
Total oil consumed per month	369.5 bbl.
Cost of oil per month, 369.5 x $1.40	$517.30
Cost of maintenance and depreciation per month	150.00
Cost due to warpage per month	60.00
Total operating cost of furnace per month	$727.30

Based on a production of 57 tubs per 24 hours, and figuring 25 working days, a production of 1,425 tubs per month is secured from the muffle oil furnace, at a cost of 51c. per tub.

Average monthly electric energy consumption equals 133,000 kw-hr.

Cost of electric energy, 133,000 x $.008	$1,064.00
Cost of maintenance and depreciation	37.50
Total operating cost of electric furnace per month	$1,101.50

Based on a production of 96 tubs per 24 hours, there is a monthly production of 2,400 tubs from the electric furnace, at a cost of 45.8c per tub.

In the above comparison the electric furnace is not credited with a better product nor with the reduction in rejected ware during the enameling operation, and yet the electric furnace does produce this desirable result. Due to the lack of reliable data it is extremely difficult ro make a comparison in dollars and cents, but the principal factor in the economy in the use of the duplex electric tub furnace is the increase in production obtained with the same number of men as was formerly employed on a single oil furnace."

* * *

A survey of 157 representative businesses shows a net income of $688,000,000 in 1924 and $910,000,000 in 1925, an average increase of 32 per cent In short, business is now looking to decreased costs of production, and increased volume, to produce profits. It is obvious that in this situation every effort must be made to cut production costs and that profits lie largely in elimination of waste and in economies of operation.

* * *

Thomas A. Edison says he can't stop working, although he is 79. Well, a good many younger men could show him how.

What a wonderful thing a dictionary is, after all.

Porcelain Enamel Digest

The Gas Appliance Society of California recently sent out a letter, urging the manufacturers of porcelain enameled ware not to guarantee their enamel. The letter reads:

"Dealers and manufacturers of porcelain enamel gas ranges have for some time had a difficult problem in replacing enamel on ranges on account of salesmen telling customers that the enamel "is guaranteed," "will last a life time," etc. As we all know, the very fact that enamel is to a large extent glass, makes it impossible for a retailer, jobber or manufacturer to stand behind such statements without a great loss.

To meet the problem the San Francisco Gas Appliance Society put a committee to work solving the problem. Their decision was that on account of the appearance and cleanly features of enamel ranges they can very easily be sold without guaranteeing the enamel or making any wild statements concerning its lasting or enduring qualities.

Accordingly we are submitting the committee's recommendations which are that a tag and a sticker be put on every porcelain enamel gas range before it is sold to the consumer. These should state specifically that due to the nature of the product the enamel cannot be guaranteed against breakages. If every enamel gas range sold in California had this sticker and tag attached we would all have more money in our pockets."

* * *

The many friends of Paul Quay will be pleased to hear of his marriage on May 29th to Miss Katharine Brooks.

* * *

Anderson Stove Works, Anderson, Ind. is having plans made for a one-story addition to their plant.

* * *

Stimpson Computing Scale Co., Louisville, Ky., has bought site and is having plans made for a new plant.

Some "Largest" Users of

M and T

Tin Oxide

The two largest terra cotta companies in the country.
The largest vitreous sanitary pottery company in the country.
The largest solid porcelain pottery company in the country.
The two largest floor and wall tile companies in the country.
The largest faience company in the country.
The largest enameled sanitary ware company in the country.
The largest enameled stove company in the country.
The largest enameled stove parts company in the country.
The largest enameled steel specialty company in the country.
The largest enameled iron specialty company in the country.
One of the two largest enameled sign companies in the country.
Three of the largest enameled cooking ware companies in the country.
The class of firms using our product is impressive proof of its high quality and uniformity.

"A good article sold at a fair price will find an ever widening market"

Metal & Thermit Corporation

Ceramic Department
HOMER F. STALEY, Mgr.

120 Broadway
NEW YORK

Buy the Best Value

In buying oxides, as with anything else, you want to get the most for your money.

For fifty-seven years we have been supplying high-grade color oxides. Drakenfeld colors are stronger, therefore it's cheaper to use them.

Our policy is one of broadness and generosity. When you want to buy the best, buy Drakenfeld's.

B. F. Drakenfeld & Company, Inc.
50 Murray Street
NEW YORK CITY

Some men are known by their deeds; others by their mortgages.

Get the Best Service

Our close connection with the enameling industry gives us a thorough grasp of enameling problems.

Ample laboratory and manufacturing facilities, expert chemists, and rigid technical inspection assure you of prompt shipments and a uniform product.

Better service speeds production and lessens your enameling worries.

Write for prices on colors
you are using.

B. F. Drakenfeld & Company, Inc.
50 Murray Street
NEW YORK CITY

It is a striking coincidence that "American" ends in "I can."

One large kitchenware enameling plant has recently expended about $10,000.00 to improve ware handling facilities in the dipping department and expect to eliminate between 20 and 30 girls from their force.

Another plant is using two of their large battery of furnaces to a point of maximum efficiency as regards labor. The two operators are kept extremely busy keeping up to the capacity of the furnace which will burn 4200 No. 10 dish pans in one coat in an eight hour shift. The fuel consumption is no greater than on furnace of 65% of the same production. Certain details of furnace construction and ware handling equipment make this possible.

Still another kitchenware company is having a complete new plant built and equipped along the most modern lines by an industrial engineering company. There are far-reaching possibilities in the use of the overhead tramrail, not only in its limited use in the pickle room but in other departments.

In combination with the lifting beam all raw materials, steel, chemicals, acid, cartons, etc., can be quickly and easily unloaded and transported to the proper storage space by two men in quick time.

As used by one prominent kitchenware plant and very common in dipping and painting of metal furniture and stove parts, ware can be dipped and placed on large hanging racks, thence through the dryer and any further operation and on to the furnace without any jar or wear on the floor. By switching it can be stored till ready for burning. The same racks can return burned ware by another route to dipping or sorting tables for another coat. It embodies the use of cubic content of the plant rather than so much square footage. Rack movement is easier than with floor racks and many ware handlers can be eliminated.

* * *

Ralph W. Gallagher, vice president and general manager of the East Ohio Gas Company, will direct the Natural Gas Association of America during the coming year.

He was made president recently at the organization's annual convention, held in Tulsa, Okla., according to news dispatches.

* * *

The British strike cost England $8,500,000 an hour or seventeen hundred millions in all.

* * *

These new check spats that are on the market should not be confused with the "brilliant footwork" that one reads about in lawn-tennis reports.

Fortune does not change men: it unmasks them.

SIL-O-CEL

HEAT INSULATION

In Lusterlite Furnaces

A 25 per cent Increase in Efficiency

Uniform distribution of heat, reduced fuel consumption and longer furnace life are credited to the Sil-O-Cel insulation employed in Lusterlite furnaces.

In the words of Mr. R. M. Onan, engineer of the Chicago Vitreous Enamel Product Company, "Sil-O-Cel insulation is specified and installed in all Lusterlite furnaces for the reason that we have found it increases the efficiency of the furnace approximately twenty-five percent, permitting more uniform heating, a reduction in fuel consumption and the prevention of radiated heat losses. It also increases the life of the furnaces since they do not have to be fired so hard to maintain the proper temperature".

Mr. Onan states further: "We are very enthusiastic users of this material, and find it superior to any other insulation on the market." He speaks on the authority of long experience and wide research. His statements are typical of those by a score of prominent furnace designers who have learned from experience that *it pays to insulate right, wherever heat is set at work.*

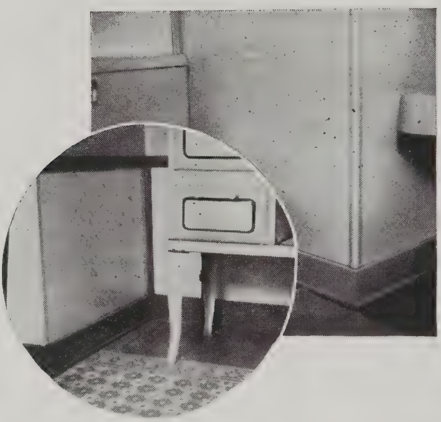
CELITE PRODUCTS COMPANY

11 Broadway · · New York
53 W. Jackson Blvd · Chicago
1320 S. Hope St · Los Angeles
140 Spear St · San Francisco

BARRIERS
TO INDUSTRIAL WASTE
FILTER-CEL
AND
SUPER-CEL
SIL-O-CEL
CELITE

Celite Products · Limited
New Birks Bldg · Montreal · Que.
Celite Products Corporation
147 Windsor House · Westminster · London · Eng.

OFFICES AND WAREHOUSES IN PRINCIPAL CITIES



These photos were taken at the home of John Bardush, Superintendent of Enameling at Grand Rapids Refrigerator Co., and loaned to us by Ceramic Industry. The walls of the kitchen and bathroom are of Vitreous Enamel Steel Sheets. There is a good field for the use of sheet iron enameled ware for walls and the advantages over other types of wall covering are many.

* * *

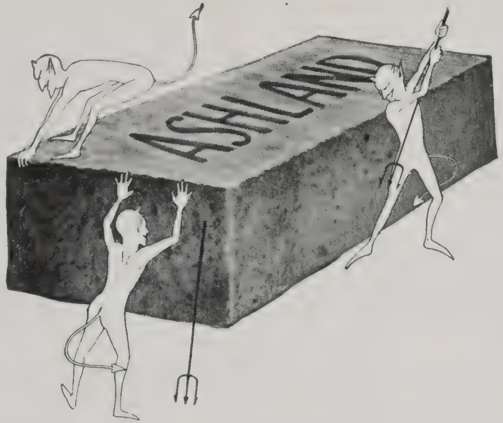
At the recent convention of stove manufacturers, the following officers were elected:

President, Jones T. Templeton, St. Louis, Mo.
First Vice President, A. L. Lindemann, Milwaukee, Wis.
Second Vice President, E. T. Harrison, Richmond, Va.
Treasurer, Kelsey H. Jewett, Buffalo N. Y.
General Secretary, Allen W. Williams, Columbus, Ohio

The scope of the association has been extended and the name changed to the National Association of Manufacturers of Heating and Cooking Appliances. The association now has a traffic bureau, an accounting and cost finding service and a legal department.

* * *

Members of the stove and enameling industries will be sorry to hear of the recent death of Mr. Frank Sabin. Mr. Sabin was associated with Roberts & Mander Stove Company and was a very prominent figure in our industry.



Inferior or uneven quality and lack of uniformity in texture and size, condemn fire brick to a short life at the very outset.

Ashland brick contains less than 5% of fluxing elements. Its uniform dimensions offer less chance for failure at the joints. For exact fit, guaranteed value and freedom from dissolution, use Ashland brick of Kentucky fire clays.

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND, KENTUCKY.

Sales and Service Offices

New York City
Cleveland, Ohio
Indianapolis, Ind.

Chicago, Ill.
Detroit, Mich.
Havana, Cuba

Bits of Frit

"Now, my son, tell me why I punished you."

Boy (indignantly)—"Oh, gee! First you pounded the devil out of me, and now you don't know what you did it for."—*Pitt Panther.*

* * *

Barber—"Which side do you part your hair, Sir?"

Languid Gentleman—"Really—er—I don't know. My man does that."
—*Punch.*

* * *

UNKIND!

Percival—"That was the most unkindest cut of all, as the poet says."

Penelope—"What was that?"

"I showed her one of my boyhood pictures with my father holding me on his knee, and she said, 'My, who is the ventriloquist?' "—*Youngstown Telegram.*

* * *

FROM A CLUB CHAIR

The perfect man would be he who never succumbed twice to the same temptation, but this, unfortunately, is impossible of achievement. There aren't enough different temptations to last a man's lifetime.

* * *

A Chicago boy of nineteen recently asked his father's consent to a second marriage. This increase in parental respect by the younger generation is very encouraging.—*Life.*

* * *

NOT QUITE SO GOOD

Caller—"I want to see the boss."

Office Girl—"Sorry, but he's in conference, with the vice-president and general manager."

Caller—"Let me in, I know a funny story, too."
—*Dry Goods Economist.*

Service is a yardstick by which greatness is measured.

We Can Help You Sell More Stoves, Ranges and Furnaces

LET us take a burden from your shoulders in the planning and preparation of your sales promotion and advertising effort.

Fifteen years intimate association with the Stove Industry (through our executives) from travelling a territory to directing sales and advertising policies for large Stove Manufacturers, has given us a grasp and understanding of your Advertising and Selling problems that can be turned to your advantage most profitably.

Add to this, our quarter-century of successful direct-mail and general advertising experience, and you have the basis for unusually effective selling literature and direct-mail campaigns.

A post card will bring complete information about our work and ourselves.

THE HOUSE *of* HUBBELL
INCORPORATED
Advertising *Merchandising*

HUBBELL BUILDING
CLEVELAND
U·S·A
648 HURON ROAD

"How's that new secretary of yours making out?" inquired the senior partner.

"Oh, all right, I suppose," answered the junior. "She's got things so tangled up in my office already that I can't get along without her."—*United Effort.*

REASONABLE

The local church was making a drive for funds and two colored sisters were bearing down hard on Uncle Rastus—

"I can't give nothin'," exclaimed the old darkey. "I owes nearly everybody in this here ole town already."

"But," said one of the collectors, "don't you think you owe the Lord something, too?"

"I does, sister, indeed," said the old man, "but he ain't pushing me like my other creditors is."—*Pots and Kettle.*

* * *

A doctor thinks that everybody should breathe deeply. We agree, so long as they don't do it into saxophones.

FOLLOW DIRECTIONS CAREFULLY!

"Where is the manager's office?" asked the salesman.

"Follow the passage until you come to the sign reading, 'No Admittance.' Go upstairs till you see the sign, 'Keep Out.' Follow the corridor till you see the sign, 'Silence,' then yell for him."

* * *

We are promised a film of the habits of the mosquito. Is no home life to be sacred?

* * *

There is no marrying in heaven. Poor Peggy Joyce!—*Columbia State.*

If you cannot win, make the one ahead break the record.

Thousands of Kitchens Reveal evidence of better enameling

LOOK into one of these spotless kitchens, on every side you will see the matchless work of the enameler who uses ARMCO Ingot Iron.

¶ Enamelers who work with this virtually degasified iron find that cull losses are few and far between. Sheet after sheet is consistently uniform. The velvety texture of ARMCO Ingot grips and firmly holds the porcelain enamel coating.

And then, too, the enameler who uses this "purest iron made" has the assurance of substantial quality—the kind of quality that discriminating buyers who read ARMCO'S National Advertising are everywhere demanding.

PORCELAIN ENAMEL ON
TRADE MARK
ARMCO
REG. U.S. PAT. OFF.
RESISTS RUST
INGOT IRON

The American Rolling Mill Co.
Middletown, Ohio

Export—ARMCO Inter. Corp.
Cable—ARMCO, Middletown

ARMCO TRADE MARK **INGOT IRON**
The Purest Iron Made

“HURRICANE” DRYERS *for* ENAMELED WARE

A SECTIONAL DRYER
of
Guaranteed Capacity

An important feature of the “HURRICANE” Dryer for Enameled Ware is the standard, sectional construction. Each dryer is of Guaranteed Capacity, and is so constructed that, as capacity requirements of the plant increase, the dryer can be increased to correspond, by adding more standard sections.

The Automatic, Continuous “HURRICANE” Dryer has effected one of the greatest operating economies of recent years in the production of Enameled parts. It is applicable to enameled ware of steel or cast iron, to table tops, stove parts and similar products.

The process is automatic; labor is lessened; uniformity is increased; while floor space, steam and power are reduced greatly over former methods of drying.

Full Description on Request

THE PHILADELPHIA DRYING MACHINERY COMPANY

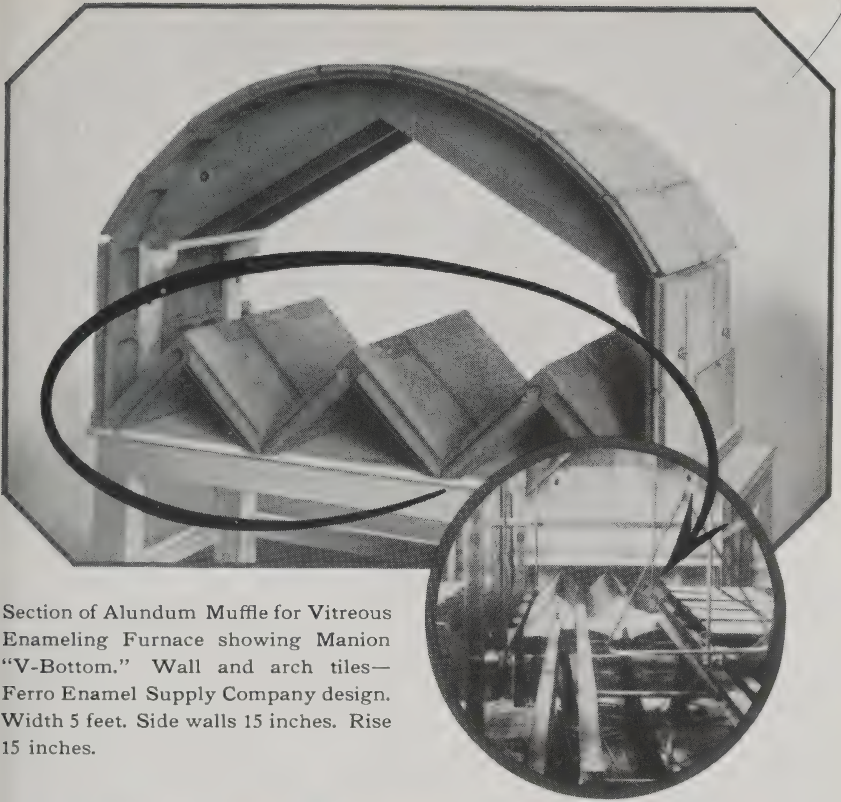
“HURRICANE” Dryers for ENAMELED WARE

Stokley Street above Westmoreland Philadelphia, Pa.

Canadian Agents:
Ross Whitehead & Co, Ltd.
Montreal

HURRICANE
Ideal Drying Every Day

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.



Section of Alundum Muffle for Vitreous Enameling Furnace showing Manion "V-Bottom." Wall and arch tiles—Ferro Enamel Supply Company design. Width 5 feet. Side walls 15 inches. Rise 15 inches.

Alundum Enameling Muffles

INCREASED output is obtained from enameling ovens fitted with Alundum muffles because of their high conductivity. Long service is assured by the material—fused alumina.

Alundum muffles are mechanically strong and chemically inert.

Repeat orders for Alundum muffles like the one in the furnace above are the best evidence of satisfactory performance.

NORTON COMPANY WORCESTER, MASS.

R-266

Sweating Ovens for Profit

THE late Lord Leverhulme, the great English soap magnate, creator of the famous LUX and LIFEBUOY soaps, once declared his belief that more money could be made by manufacturers if they would adopt the 6-hour day for men and the 24-hour day for machines. "Don't sweat your men," said he, "sweat your machines."

Here's a lesson for every Enameler as well. Sweat your ovens for more output per dollar invested—sweat your plant for more production per dollar of overhead.

Brown indicating and recording Pyrometer equipment your burners to know the exact temperatures, and the temperature trend, at all times. Guided by this exact knowledge it becomes practicable to hold the oven to the precise time-temperature cycle known to be most efficient; thus producing ware of maximum quality in minimum time and with minimum fuel consumption.

In a year's time, faster burns mean a substantial increase in output per oven, larger dividends on plant investment and overhead—a more liberal margin for wages to labor.

Address—The Brown Instrument Company, 4592 Wayne Avenue, Philadelphia, Pa., or any of our district offices in New York, Boston, Pittsburgh, Cleveland, Detroit, Chicago, Indianapolis, Birmingham, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City or Montreal.

Brown Pyrometers

A new Edition of this book is now ready!

Free copy will be sent promptly on request.

E N

The Enamelist

THE LIBRARY OF THE
1926
UNIVERSITY OF ILLINOIS

A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY

JULY-AUGUST. NINETEEN-HUNDRED-TWENTY-SIX

Cut down your rejects

If your percentage of rejects is high, look to your cleaning methods.

Good clean Sand-Blasted surfaces will do more to reduce rejects than any other one factor.

Pangborn
Hygienic Cabinet
Type "EH-1" Direct Pressure
Tables in 6′, 8′ or 10′ diameters
at floor level or 21″ above.

Your product may require a Room, or it may be a Barrel or a Rotary Table.

It's our business to help you to get the biggest output at lowest cost, and Sand-Blasted so that rejects are not due to poorly cleaned surfaces.

With a line that is complete in all types and sizes – we have no hobby to ride for any particular one.

Sixty percent of Pangborn annual volume is repeat business from satisfied customers.

Look over our Condensed Catalog and then talk with us.

Pangborn Sand-Blasts
and Dust Suppression Equipment

Pangborn Corporation Box 853 Hagerstown, Md.

The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

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VOLUME 3   JULY-AUGUST, 1926   NUMBER 9

How's Business?

IN spite of hot weather, inventory-periods and vacations, the enameling business has stayed good. During June 80% of all the enameling furnaces in the country were operating. Reports received, as follows, are very encouraging:

"Planning to install 2 more furnaces," writes a New York concern.

"Working 3 eight-hour shifts."

"Going strong."

"Building another furnace."

"Thirty per cent increase this month over May."

"Business has slowed up."

"Closed for two weeks vacation, but prospects good."

"Business excellent."

General business showed marked improvement for June. C. L. Bradley, of the Union Trust Co., Cleveland, makes the following summary of present conditions: "Conversations with business men from both the West and East—even where they are engaged in industries temporarily in the doldrums—indicate that the currently increased activity has been widespread both geographically and by industries.

Certain it is we are in a period of relative stability, a period in which everyone is keenly sensitive to and hence protected against the more common economic actions and re-actions, a period in which business men are relatively unanimous in their choice of wage and price policies. As a result it gives promise of stability and, endorsed by a confident public, of continuance."

By "passing the buck" we keep it in circulation.

Delco Plans Huge Development

ANNOUNCEMENT was recently made that $20,000,000.00 would be spent in expanding plant facilities of the Delco-Light Co. Frigidaire Division, Dayton, Ohio, and the actual construction work has been started on a factory which will be a mile long, and which will cover 68 acres of floor space.

E. G. Biechler

The output of this new plant will double their present production of Frigidaire electric refrigeration plants.

"This large program of expansion," states Richard Cull, in the Dayton Daily News, "is a tribute to the successful leadership of E. G. Biechler, President and General Manager of this concern."

Biechler's climb to one of the topmost rungs of the industrial ladder is regarded as little less than phenomenal by those not personally acquainted with him, but to one who has known him since his boyhood in Miamisburg, Ohio there is no surprise in his great success.

On leaving Miamisburg High school, he went to work for C. W. Raymond Co., Dayton, makers of clay products machinery. From a job little more than that of office boy he rose by successive stages to assistant sales manager. He became interested in reports about the growing importance of the Delco Co. in Dayton, succeeded in forming a connection with this firm, which was engaged in the manufacture of automobile starter equipment. Later, the newly-organized Delco-Light Co. offered a more promising opportunity and he connected with this industry in a subordinate capacity. When R. H. Grant was transferred by the General Motors to the vice presidency of the Chevrolet division, Biechler stepped into his place as acting general manager, and won such success in this capacity that he was soon advanced to the presidency and general managership of the Delco-Light Co.

Biechler is only 36 years old and possesses all of the robustness of mind and body to make him more than a match for any job he undertakes.

* * *

Perhaps you didn't know the Editor almost made a trip to Paris. He and his brother, J. C. Weaver, got as far as the boat, where the staff photographer of the ENAMELIST caught them in a characteristic pose.

* * *

In a recent issue of Good Housekeeping we read the following:

Every housekeeper should recognize the fact that the high surface gloss of porcelain enamel table tops is dulled by acid, milk, or water marks. However, these dull spots do not affect the sanitary aspect of the porcelain, nor the serviceability of the table top. The Institute believes that notwithstanding this disadvantage, the porcelain enamel top is a wise purchase.

St. Louis Enamelers' Club Meets

Meeting of the St. Louis District Enamelers Club was held Tuesday evening at the American Annex Hotel. Due to the warm weather, attendance was small, but the program was excellent.

Mr. Frank Jaeger of the Superior Enamel Products Company read a paper on "A Method of Control of Enamel For Dipping Flat Ware", which was audited by Mr. E. T. Sweeley, and opened a very lively discussion.

Mr. Stretch with the Koken Companies, resigned as chairman of the Club. His resignation was due to pressing duties which make it impossible for him to give the office of Club President the time warranted. His resignation was accepted with regret.

Mr. Frank Jaeger of the Superior Enamel Products Company has been unanimously elected to fill the unexpired term of the President for this year. Mr. Jaeger was heartily congratulated by every member. Nine new members were admitted to the club bringing up the total of membership to forty-eight. New members admitted are as follows:

Frank Kollinger	Silica Enamel Sign Company.
Ned Willard	Eureka Steel Range Company, O'Fallon, Ill.
Richard Elsner	Belleville Enameling & Stamping Co.
C. Snarrenderg	The Koken Companies.
L. L. Kammermeyer	Brilliant Sign Company.
Jacob Hug	Roesh Enameling Range Company.
A. L. Arnold	Karr Range Company.
John Lancaster	Wrought Iron Range Company.
F. Siewing	Superior Enamel Products Company.

The Club will have no meeting during July and August but will meet at the picnic to be held in Belleville in August.

* * *

Carl Schwier of Mansfield Vitreous Enameling Company reports 27 bass for one day's catch. He sends in a picture of one, but honestly, we haven't the nerve to print it.

* * *

Mr. A. E. Krebs, of the Belleville En. & Stg. Co. is leaving this week for a trip to California.

Chicago Enamelers' Club Meets

A short but meaty talk on "Ground Coats for Cast Iron" was given by Robert C. Boyd of the Chicago Hardware Foundry Co., at the June meeting of the Chicago Enamelers Club.

After a general resume of ground coat literature Mr. Boyd gave a few facts regarding operations at his plant. The frit is smelted to a smooth glass and is fractured by running the molten frit into cold water. It is dried with the aid of waste heat and milled with 15 per cent clay and 50 per cent water. The smelting time required is about three hours for a 500 pound melted batch and the enamel is milled until it passes 150 mesh. The slip should be about 54-58 deg. Baume for best slushing. A coat of this consistency will not be too thin or too thick. The clay content of this enamel is high but it is very intimately mixed and therefore becomes thoroly fused with the batch. Care must be taken that the ground coat is not too coarse or it will pit and if slushed too heavy it will pinhole. Cobalt and manganese help to make a ground coat grip better and tend to cure chipping in a low silica iron. The fact remains that very few sanitary plants use cobalt in the ground.

Manganese is a good material for a batch which is to be sintered. It has a tendency to keep the batch spongy and in this condition it is easier to break up.

Mr. Devorak of the Crown Stove Co. stated that in Germany ground coats are smelted down in a regular burning furnace and the hot mass is then fractured by a stream of water played upon it. It is necessary to crush the mass before it is milled. These grounds are low in fluxes and never blister. High flux grounds are burned twice in the furnace to insure the removal of all blisters. Enamel that is not smelted enough will often pinhole.

Albert Vodika of Aetna Porcelain stated that the clay content in a ground mill varies as much as 2 to 20 per cent. In burning a grip coat with high clay content the furnace must be hot, otherwise the enamel will chip off. J. A. DeCelle of Chicago Hardware Foundry stated that a high clay ground coat does not rub off and works very good in dipping.

J. A. DeCelle is acting chairman of the club in the absence of Bruce Wagner who has moved from this immediate territory.

Apeing the rich is a good way to make a monkey of yourself.

Getting On in the World

"Few men deliberately choose the positions they now hold," claims Forrest Crissley, a successful Cincinnati business man, in an article in the Saturday Evening Post. Only one man of my personal acquaintances figured out in advance definitely what he wanted to do. He is Charles R. Hook, President of the Armco International Corp. and Vice Pres. and Gen'l Mgr. of the American Rolling Mill.

Charles R. Hook

When Mr. Hook was interviewed recently, he said, "Yes, when I was a junior in high school I began to study about the main lines of business with a view to a choice. I reached the conclusion that the necessity for the conservation of our wood supply would be emphasized as the years went on; therefore many products then being made from lumber or paper would be produced, in the future, from iron or steel. This then was the business for me!

If there was one reason for my choice of the steel business back in 1898, there are twenty additional ones today. Look about any place, every place, and you can see new uses for iron and steel—scores of them. In the kitchen you find the ice box lined with iron coated with vitrified enamel, the table top, the stove front, the kitchen cabinet, and numerous other articles made of iron treated in the same way.

Information that twenty-five years ago was held as sacredly secret by superintendents and other department heads is not only available today to the ambitious young man but he is urged to accept and use it.

A hill is a mountain that lacked ambition.

Comparison of Gas and Electricty for Industrial Heating*

Although each of these heat sources has applications in which it is superior to the other, choice must be governed by conditions

By R. C. Gosreau
Consulting Engineer, St. Louis, Mo.

KEEN competition between gas and electric companies for the industrial heating load is apparent throughout the country. The rapid advances in heating load made by both types of utility companies indicate that less satisfactory methods of heating are being abandoned in many industries. Which of these two heat sources has the superior merit has not been definitely determined for most uses, but there are certain applications in which one or the other shows a marked superiority.

The cost of heating in a process should not be based on the purchase price of cubic feet of gas or kilowatt hours of electricity, but should be figured with regard to the degree with which it is possible to utilize the potential energy in the source of heat.

FUEL GAS AS A SOURCE OF HEAT

The heat content of fuel gas in B. t. u. per cu. ft., determined by laboratory test, is constantly used as a basis for figuring the utility of a fuel gas or comparing it to some other fuel or source of heat. This quantity is not, however, a proper basis for such comparison, because there are many factors influencing an industrial operation which are not reproducable in the laboratory, and the laboratory determination, therefore, gives no clue to the results of the utilization of the fuel.

Just what proportion of the heat content of a gas is developed by a burner is not definitely known, but there are probably no burners that develop the same quantity of heat energy per unit of gas volume burned as is evolved by a laboratory calorimeter. Since there are no means available for easy determination, with even fair accuracy, of the amount of heat energy developed when a cubic foot of gas is burned in industrial equipment, a computation is usually made, in which the heat energy absorbed by the

Abstracted from CHEMICAL AND METALLURGICAL ENGINEERING June, 1926
Pages 337-339.

It is a long step in manhood from a Zero to a Hero.

work is compared to the total heat content of the gas burned, in order to obtain the heating efficiency of the operation of equipment. Such a procedure does not show the actual efficiency of utilization, because, although in one case the burner may be efficient and the furnace design poor, in another case the reverse condition may exist, and no distinction can be made.

One important factor affecting the utilization percentage is the ratio of heat absorption by the work. The rate of heat energy input into the equipment should be related to the capacity of the work to absorb heat, or the heat losses will be excessive. In general, the larger the chamber in which the absorption takes place, the faster is the rate of heat transmission to the work, provided the chamber walls are at all times higher in temperature than the work. This fact is due to the greater radiation realized. But such large radiation surfaces also increase the radiation losses from the outside of the furnace. Under these conditions, if the rate of heat input exceeds the rate of absorption by the work, the excess must be represented by increased radiation from the outside of the furnace. The tendency in designing equipment is to build the setting so that a maximum of heat generation may be accomplished in a minimum of space, which results in decreasing the heat losses and accelerating the process to which the heat is applied. Any rate of heat energy generation faster than the rate of absorption means a loss. Therefore, the furnace volume should be as near the volume requirements of the work as may be.

Calculations of heat losses and heat utilization are generally but approximations, wide of the actual fact. Gas fuels in competition with other types of heat suffer injustice in such calculations, because they are based on factors determined in a laboratory under scientific methods of control and measurement. What really matters is whether the fuel proves economical in actual use.

The fuel requirement of a gas burning appliance is generally the first thing considered. The hourly demand for gas is a measure of the hourly rate of doing work. The rate of transfer of energy is variable, depending on the high and low temperature masses. High temperatures have greater intensity than low and at high temperatures molecular activity is greater. Also radiation is more intense at high temperatures.

For the transfer of heat from a furnace wall to an object within, the wall must first be brought to the temperature to which it is desired to bring the object. In most heating furnaces, the furnace is of greater surface and volume than the object being heated, so the walls, roof and bottom first reach the working temperature, then the heat transfer by radiation, conduction and convection proceeds.

In some equipment an attempt is made to heat by direct flame radiation. In such cases the flame impinges directly against the work that is being heated. When such a procedure does not harm the work it is more economical than indirect heating, but the practical disadvantages lies in the difficulty of control. When a muffle is used, heating is the slowest and most expensive, as the utilization factor is low. Another method of heating is to carry the hot waste gases along the furnace roof at a low velocity, the roof being well insulated. These gases radiate heat downward to the work. To be thermally efficient, such a furnace must have provision for using the heat remaining in the gases after they have left the furnace. Heat energy transfer from hot gases depends on the gas velocity, which should be low for good results. In any heating device using gaseous fuel, the rate of heat energy development and the rate of heat energy absorption must be synchronized so that the work can take up the energy as rapidly as it is developed.

HEATING WITH ELECTRICITY

There are three ways of applying electrical heating: By direct or radiated arc; by direct or radiated resistance; and by high frequency induction. In arc heating the material may be heated by radiation from an arc not in contact with the work, or the arc may make direct contact with the work in which case the heating is by radiation and also by energy given off from the arcs of contact between the electrode and the work. In resistance heating either the resistance elements radiate their heat to the work through the furnace atmosphere, or the heating is direct by passing the current through the work which becomes

Some men make up their minds by lifting their chins.

a part of the electrical circuit. In high frequency induction heating, an induced current is set up in the work, which is part of a secondary circuit, by means of a high frequency current in the primary circuit.

Resistance heating by radiation applies to every process using heat in a range from 100 to 2,000 deg. F. The only limittion of this method lies in the ability of resistors to withstand heat. The material composing the resistors possesses definite electrical properties. These, for proper resistor material, are nearly constant and provide a basis for comparison. Given the specific resistance of the resistor material, the heat developed by any energy input can be closely computed. From the metered electrical input, the heat energy dissipated in the element can be computed.

ECONOMIC AND COMMERCIAL CONSIDERATIONS

Electrical and gas heating compete mostly in the range from 100 to 2,000 deg. F., which covers the largest part of the field of each. Although many operations using gas are conducted at temperatures above 2,000 deg. F., the cost of gas fuel on these installations very nearly equals the cost of electric energy in most parts of the United States. The choice as to application is properly divided into two considerations—an economic and an engineering consideration. The recent rapid increase in the amount of current used for melting and heating metal shows that electricity can often compete economically where quality is paramount.

The selection of gas or electric heating appliances by a manufacturer presents a problem. Gas and electric rates are not equal from the standpoint of available heat energy. The final decision as to which to use is not generally made upon which source gives the largest amount of heat units per dollar expended, or upon which gives the greatest overall efficiency in the process, but unfortunately is largely a matter of salesmanship.

The true factor to consider in the cost of the heat energy for any process is not the absolute cost but what is the relative cost in the final cost of the product. An example might be given of a high pressure, gas-fired, semi-muffle furnace to operate up to 2,000 deg. F., including furnace, compressor and motor, burners and accessories, the total cost of all being near $6,000. An electric furnace to do the same work including transformers, meters, wiring and switches with the heating elements, will cost around $18,000. Both furnaces will have the same advantage as to quality of work, convenience of operation and cleanliness, but the electric furnace will produce nearly three times the product of the gas fired furnace.

In cases where the more costly equipment delivers the heat energy to the work in a more satisfactory manner it would be both poor engineering and poor economy to buy the lower priced equipment because of price alone. Equipment that shows a high operating cost in relation to the value of the product produced may have other factors offsetting this high cost so that in the last analysis there is little difference, or the situation is reversed.

The cost of energy in fuel gas and electricity varies in different parts of the country. So many factors are concerned that a definite example for one locality would not hold good in any other. The value of heat energy from any source can be computed in cents per million B.t.u. Suppose the gas rate to industrial consumers in a certain city is 70 cents per thousand cu.ft., and the rated heat content is 585 B.t.u. per cu.ft. Then it requires 1,710 cu.ft. to yield 1,000,000 B.t.u., and the cost would be $1.20.

Suppose in the above case the industrial burner is able to develop but 420 B.t.u. per cu.ft. of gas burned, that is the efficiency of the burner is 72 per cent. Then 2,382 cu.ft. of gas must be burned to develop 1,000,000 B.t.u. This amount of gas by calorimeter determination contains 1,390,000 B.t.u. and the charge for it would be $1.67. From this it will be seen that the gas company charges $1.20 per 1,000,000 B.t.u. delivered, while the consumer pays $1.67 for each 1,000,000 B.t.u. utilized. This indicates that the smaller the customer's utilization percentage the greater is his gas cost.

To deliver 1,000,000 B.t.u. in heat energy generated from electric current, the heating element must develop energy equivalent to 293 kw.-hr. Not all of this energy is radiated but represents the equivalent conversion of electrical to heat energy. With gas at 70 cents per thousand cu.ft., the equivalent price of electrical energy is 0.568 per kw.-hr. Allowing for losses in the electrical system of 10 per cent, the rate for electric energy increases to 0.63 cents per kw.-hr. The mention of such a rate for electricity may arouse some protest, but there are some plants generating their own current that meet this figure. The equilibrium between gas and electric cost at rates that consumers can afford to pay, depends entirely on the degree of utilization of the potential energy in the fuel and how this energy can be developed to its maximum value. In many cases, gas, in spite of its lower unit cost, does not show a lower net cost.

The cost of a fuel is greater or less as it is used or wasted. In burning coal the tendency is to waste most of the energy. This is possible because a ton of coal may contain 26,000,000 B.t.u. and if it costs $5 the cost is only 19.2 cents per 1,000,000 B.t.u. If 20 per cent of the heat is utilized this heat costs 96 cents per 1,000,000 B.t.u. In the case of oil, suppose a gallon of crude oil contains 130,000 B.t.u. and costs 6 cents. Then 1,000,000 B.t.u. costs 46.2 cents. If the overall utilization of this energy is 50 per cent, the energy cost is 92.4 cents per 1,000,000 B.t.u. obtained from oil. The figures for gas and electricity have been given above. These figures show that as the unit value of energy in any fuel increases, the percentage of utilization must increase or its use becomes prohibitive. As a consequence, the cost of a fuel is not the determining factor; but the degree of utilization is the prime, important and only factor to consider in its application in any heating process.

* * *

NEW RECORD FOR DELCO-LIGHT SALES

The retail sales of the Delco-Light Company, Dayton, Ohio, a subsidiary of the General Motors Corporation, established a new record when they reached a total of $11,250,000 in May. This compares with $4,300,000 in that month last year.

HERE'S a fine history of Robert MacDougall, who is associated with the Coonley Mfg. Co., Cicero, Ill. Mr. MacDougall attended the Lewis Institute and University of Wisconsin, and has made a record for himself in the enameling industry.

"My first job was with the Allis Chalmers Co., and I was with this concern two and a half years as an apprentice machinist. I was next designing tools and jigs for the International Harvester Co., for a period of a year and a half. Following this for two and a half years I designed special machinery for Crane Co. I was employed in the Mechanical Methods Department of The Western Electric Co. on development of manufacturing processes two years before joining the Navy.

I enlisted in the Navy during the late war in order to "see the world" and help fight the war but was assigned to the shipyards in South Chicago. I was chief draftsman in the Inspector of Machinery's Office 9th, 10th, 11th. Naval Districts and rated C. M. M. when the Kaiser moved to Holland. I was released from service in the Navy in February 1919 after a period of fourteen months spent principally in laying out and supervising steam installations on vessels.

I resumed my work with The Western Electric Co. after the war and in a short time came with the Coonley Mfg. Co.

In the period of seven years I have been with the Coonley Mfg. Co. and associated with Mr. H. C. Beasley of that company we have straightened out the flow of material through the plant, electrified the factory, installed an oil system, put up buildings and developed and built a number of furnaces of various types. One of our furnaces the Oil Recuperator Smelter was described in The American Ceramic Society Journal in August 1925. Another furnace has been put on the market by The Deemack Furnace Co.

Self control is the key to leadership.

AT the Fifty-fifth Annual Meeting of the National Association of Stove Manufacturers recently held in New York, the names of the following members, deceased since the last meeting, was published in the official program.

◆

CHARLES A. DuCHARME
Michigan Stove Company, Detroit, Michigan
Died December 28th, 1925

EDWARD WOOD
Wood-Bishop Company, Bangor, Maine
Died January 26th, 1926

WILLIAM G. HENRY
Detroit Stove Works, Detroit, Michigan
Died February 10th, 1926

ISAAC NEWTON BUCKWALTER
Buckwalter Stove Company, Royersford, Pa.
Died February 25th, 1926

C. E. RANDALL
Knox Stove Co., Knoxville, Tenn.
Died March 24th, 1926

GEORGE MITCHELL
Pittston Stove Company, Pittston, Pa.
Died March 26th, 1926

ARTHUR S. JONES
The H. Wetter Mfg. Co., Memphis, Tenn.
Died March 30th, 1926

"I wish I had the power of writing or speaking, for then I would describe to you how pleasant a thing it is to die."—Cullen

REG. U.S. PAT. OFF.

R&H

A1

CERAMIC CHEMICALS
MINERALS, OXIDES
and
SERVICE

are satisfactory by use. The materials sold under this well known trade mark meet every requirement of the enameling industries.

The
ROESSLER & HASSLACHER CHEMICAL Co

709 SIXTH AVENUE NEW YORK CITY

Chicago
Boston
New Orleans
Cleveland
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Pittsburgh
Baltimore
San Francisco
Philadelphia
Kansas City

"America's Leading Ceramic Material House"

Cast Iron Enameling Instructions

We recently received a very interesting catalog from Germany which gave directions for using cast iron enamels. They are as follows:

First anneal the cast iron at red heat in the muffle furnace: this will separate all dirt and any rust present, so that this may be easily brushed off with coarse sand and water after the iron has been allowed to cool. After rinsing with water the castings are placed in a boiling soda solution (about 2 lbs. soda on every 25 gallons water) and whipped about a few times in the air, so that any still adhering liquid will evaporate.

It is by no means advisable to clean the cast iron with acids such as hydrochloric or sulphuric acid, as this will have a bad effect on the subsequent enamelling process. By the above procedure a thin film of soda will remain on the iron and both prevent the latter rusting and assist in the enamelling process.

Enamelling: The grounding enamel is mixed with water to a viscid consistency and the casting is either dipped into it, or the enamel is poured with a trowel or a ladle over the iron, where it will spread in a layer of uniform thickness. The casting is then quickly wiped off, so that no rust can form, whereupon it is placed into the muffle heated to a temperature of about 800 deg. C. Here the grounding will be completely burnt in 3 to 4 minutes, so that after cooling it can no more be scratched off with the nail of the finger.

Ground Coat No. 2 should have a rough and matt appearance. It is now prepared for enameling with covering enamel, by wiping or dabbing off the casting with a moist sponge and then dipping it into the ground covering glaze which has been mixed with water to a viscid consistency or pouring the latter with a laddle over the iron; the latter is then allowed to drip off or is whipped about, so that the adhering glaze will be spread in a layer of an uniform, not too small thickness. Then the castings are left to dry.

The covering enamel will require a somewhat longer time for drying than the grounding enamel, viz., about 10 hours, so that it will not happen, that the glaze flakes off in burning.

Modern Machinery without Cost to You

BY the new Patterson Plan you can replace antiquated equipment without the investment of a single dollar of your capital and thus save several hundreds and perhaps thousands of dollars in manufacturing costs. You can by the same plan, increase capacity and thus greatly increase your earnings.

Hundreds of other manufacturers are doing it.
Why not you?

Pebble Mills for wet and dry enamel grinding.
Continuous feed and discharge Ball and Tube Mills
for dry enamel grinding
Enamel Sifters
Enamel Agitators
Washing Machinery for Clay

The Patterson Foundry & Machine Co.
Richard L. Cawood, *President*
East Liverpool, Ohio

A complete stock of porcelain and silex mill liners,
French and Danish Pebbles. Porcelain Balls.
Wire Cloth and Bolting Cloth.

Vehicles are much like men; they make faster headway on the level

After having been dried well and as long as possible, the casting is placed for 5 to 7 minutes into the muffle heated again to 800 deg. C. until the white or colored covering glaze forms a smooth glossy surface.

It is impossible to give the exact temperature and duration of the burning process, as these greatly depend on the quality of the castings to be enamelled, and on the skill and the attentiveness of the respective worker or burner.

* * *

American Radiator Expands

There is perhaps no enameling department in the country which has had a more rapid expansion than The American Radiator Co., whose first enameling furnaces and equipment were installed in 1923.

They have just completed a new addition, 125,000 sq. ft. in size, which is to be known as their Steel Enameling Department and the production of this department, it is stated, will amount to 22,000 sq. ft. of finished steel in 24 hours. In their present Cast Iron Enameling Department, their production is running 90,000 pounds (cast iron) in 24 hours.

Three large Manion Rotary electric furnaces were installed in the new department, and 3,000 feet of conveying equipment is used in getting out the production.

Additions are also being made to their Milling, Mixing and Sandblasting departments, to take care of the increased demand for enamel.

C. W. Mehling, well-known to all our readers, has entire charge of the enameling at American Radiator Company.

* * *

Earl Lines has been appointed advertising manager of The Leonard Refrigerator Company, Brand Rapids, Mich. The Leonard company, which was formerly known as the Grand Rapids Refrigeration Company, is a division of the Electric Refrigeration Corporation. He succeeds A. B. Merritt, resigned.

Who looks over the fence today tomorrow steals the horse.

Our Latest Data on
Pulverizing Silica

Feed	Approximately 20 mesh.
Product	98.5% passing 325 mesh.
Capacity	1½ tons per hour.
Total HP	85. (This includes mill and exhauster.)

The same installation has produced 99.8% passing 325 mesh.

HARDINGE COMPANY
YORK, PENNSYLVANIA
WORKS AND MAIN OFFICE YORK, PENNA.
BRANCH OFFICES
NEW YORK, N. Y., 120 BROADWAY
SALT LAKE CITY, UTAH; NEWHOUSE BUILDING
CABLE ADDRESS "HARDINGMIL NEW YORK"

Both marriage and prize rings often lead to stage careers.

ONE of the most interesting items of research being done in the enameling industry, is the work being done by Glen McIntire at the Morley laboratories at Western Reserve University at Cleveland. Mr. McIntire holds the Cushman Fellowship donated by H. D. Cushman of The Ferro Enameling Company and is studying the evolved gases from fused silicates, which in ordinary language means he is finding out what happens in the smelters when the active chemical constituents of an enamel mix are subjected to the high temperatures of the melting operation.

Mr. Cushman early saw the necessity of securing this information as an aid to control methods of smelting. He and his assistants searched the literature of this and foreign countries without results. Not a word of conclusively proved facts could be found.

He therefore established the Cushman Fellowship two years ago, which has already demonstrated its value to the enameling industry.

* * *

The James Graham Manufacturing Company announces the completion of their new plant in Los Angeles. Chas. C. Jelleff, Gen. Supt. purchased and installed all the necessary machinery and equipment to manufacture gas ranges. Also organized the plant and sales departments, which are now operating efficiently. He will now return to the Main Plant at Newark. Mr. Phil. D. Jones, formerly of the Eriez Stove & Manufacturing Company has taken charge of the Plant as the Local Manager.

The qualities we possess never make us so ridiculous as those we pretend to have.

At Your Finger Tips!

IN these five major Ashland brands are embodied all the requirements for high temperature service. By varying the proportions of Kentucky flint, semi-flint, plastic and disspore fire clays, Ashland is able to supply either steam pressed or hand moulded fire brick that meets the individual needs of refractory users to the fullest extent.

ASHLAND FIRE BRICK CO.

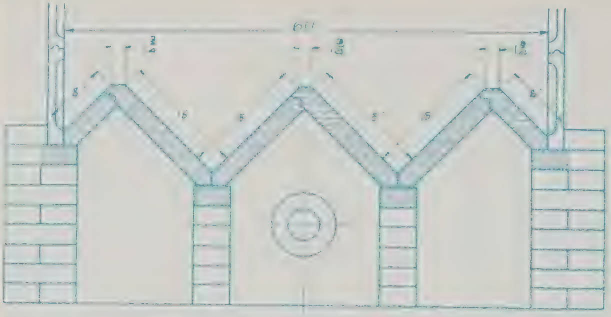
Incorporated 1886

ASHLAND, KENTUCKY.

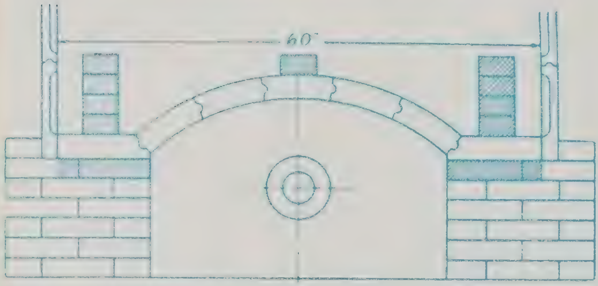
Sales and Service Offices

New York City
Chicago, Ill
Cleveland, O.
Detroit, Mich.
Indianapolis, Ind.
Havana, Cuba

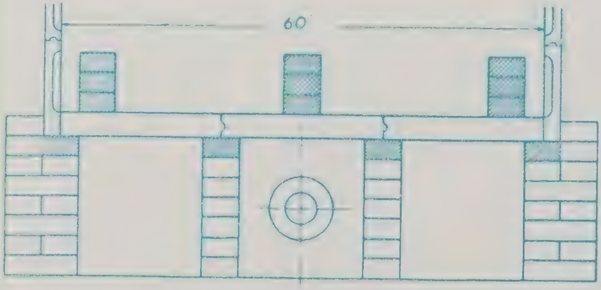
A woman never diets in a restaurant where pie's forty cents a cut.



THE IMPROVED MANION V-BOTTOM



TYPICAL ARCH BOTTOM
SHOWING GRATE RESTS OR PIGS



TYPICAL FLAT BOTTOM
SHOWING GRATE RESTS OR PIGS

Great

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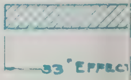
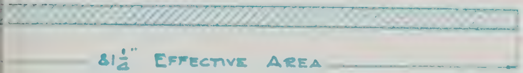
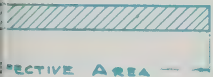


L. W. M

st Improvement in 20 Years



tion of the Manion "V" Bottom Muffle
nly the greatest improvement in twenty
was almost the only one. Burning ca-
heating capacity depends on radiating
Note illustration. Note that the "V"



bottom has twice as much
radiating surface as in the
arch bottom—almost three
uch as the flat bottom. Ware enamels
less fuel is used.

o Enamel Supply Company, my exclusive sales represen-
her particulars regarding this patented bottom. Also regarding the Manion Tubular Furnace, the Manion Continuous Rotary Furnace, the Manion Tunnel Type Continuous and the Manion Hanging Ware Furnace.

ll Fuels—Electric—Gas—Oil—Coal

ANION—Master Furnace Builder

Producing Enamels in the Laboratory

By C. H. Armstrong

EVERY enameler must be persistent in his efforts to produce better and more durable enamels and glazes and also develop new formulas for special purposes. Another necessary routine the enamelist must pursue is to continually test and check the performance of the large Pebble Mills in the grinding room.

Practically the only way that such enamels can be tested is by means of Laboratory Pebble Mills as shown in the accompanying illustration. The grinding action duplicates that obtained with the large Pebble Mills and will produce the same quality of material. No doubt many of our friends in the industry will appreciate the value of a machine such as illustrated and a short description of same is as follows:

The mill consists of two white porcelain jars held in a revolving frame by means of brass straps, the jars being easily removed. The jars are rotated by means of a small motor fastened to the bed plate and the feature of this particular machine is that all gears between the motor and the mill are eliminated and replaced with round leather belts. Thus the mill is noiseless and very convenient for laboratory operation.

The motors are supplied to suit any electric current, namely, alternating or direct current. Usually these mills are attached to a lamp socket so that special wiring is eliminated and the mills can be moved about without any difficulty. The motors are of ample size so that same can be run all night or even over weekends.

The capacity of the porcelain jars is one gallon or about five pounds of dry material. The jars measure 8½" x 6⅞" inside and are supplied with a charge of Flint Grinding Pebbles of the proper size. Of course the grinding time required with

The road to Hell is paved with war inventions.

B. F. Drakenfeld & Co., Inc.
Established 1869

IMPORTERS AND MANUFACTURERS OF
ENAMELERS' CHEMICALS

Antimony Oxide
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Chrome Oxides
Cobalt Oxide
Copper Oxides
Manganese Dioxides
Nickel Oxides
Nickel Salts
Tin Oxide, White

Main Office: 50 Murray St. New York

Many a married man's happiness depends upon his lie-abilities.

these Laboratory Mills is very much longer than with the large Pebble Mills and for Laboratory practice the ratio of same is in proportion to the diameter. For instance the enamel requiring ten to twelve hours in the large mills would need twenty-four to thirty hours in the Laboratory Mills.

Extra porcelain jars are very convenient so that it is not necessary to continually clean out the jars in order to test new formulas and this is especially true with colors.

The Mill illustrated is known by the term "Single Laboratory Motor-Driven Pebble Mill" but they can also be obtained motor driven with a double jar, four jars known as "Quadruple" and six jars known as "Sextuple."

* * *

It is of interest to note that recently an Export and Import Firm with offices in New York City and Berlin, Germany have had inquiries from German manufacturers of Enameled Products for American enamel firms. This is another feather in the cap of the American Enamel manufacturer.

* * *

Reports state that 400 sheet metal and enamel workers employed by the National Enameling & Stamping Co., Granite City, Ill., went on strike May 5 because the company declined to submit to the demands of the workers for a "closed shop" and new working contracts.

This walkout has been the first serious labor trouble that has affected the National Enameling & Stamping Co., it is said.

* * *

Herman Ely recently resigned as vice president of the Timken Roller Bearing Co., Canton, O., has been elected vice president and treasurer of the Servel Corp., of New York. Mr. Ely has gone to New York to assume his new duties.

Confident faith is the high power line of aggressive action.

Any Feldspar Won't Do!

DOMINION POTASH FELDSPAR

means

"Uniform Good Quality"

Are you depending on "just any" feldspar, and taking the risk of throwing money away in seconds? Perhaps another way of asking this same question is—"Does the feldspar run absolutely uniform?"

Feldspar that goes into your enamel must be purchased with great care. An additional 3% of quartz in the feldspar from analysis makes an actual difference of 8.55% in the free silica oxide content.

For perfect ware, you must be certain of Uniformity—that's why so many enameling plants are today insisting on

DOMINION POTASH FELDSPAR

Our reputation depends on the Feldspar we sell you, so we cannot afford to take chances, we always sell you *the best*.

Every carload guaranteed

Dominion Feldspar Corporation

Rochester, N. Y.

"Derry"
from Buckingham, Quebec

"Imperial"
from Verona, Ontario

Many claim dual personalities. Some wouldn't be any other way.

Danielson Joins Research Department

HOMER STALEY of Metal & Thermit Corporation announces the addition of R. R. Danielson as Director of Research in their Ceramic Department.

Mr. Danielson was born in Chicago, Ill., in 1892, and was graduated from the Crane Technical School in 1910. In 1914, he was graduated from the University of Illinois with degree of B.S. in Ceramic Engineering, and took a post-graduate course, securing the degree of M.S. in Ceramic Engineering in 1916.

In 1914-1916 he was instructor in Ceramic Engineering, University of Illinois; from 1916-1919, Ceramic Engineer, Royal Enameling Co. and Benjamin Electric Co. Desplaines, Ill. and from 1919-1920, Enamel Technologist, U. S. Bureau of Standards, Washington, D. C. From 1920-1924 he was Chief of the Enamel Division of that Bureau. From 1924 until June 1st of this year he was Ceramic Engineer for the A. J. Lindemann & Hoverson Co. of Milwaukee, Wis.

Mr. Danielson has been active in the work of the Enameled Metal Division of the American Ceramic Society since its inception. He was Secretary of the division for several years and later was chairman of the division. At present he is representative of the Enamel Division of the Board of Trustees of the American Ceramic Society. He has contributed numerous papers on the technology of enameling to the various technical journals of the country.

* * *

One of the speakers at the recent sales conference of Leonard Refrigerator Co. executives and representatives was the manager of the Porcelain Department, Mr. John Bardush.

Mr. Bardush spoke of his lifetime experience in the Porcelain Industry, and particularly of his twenty-five years service with Leonard.

Porcelain Linings and outside cases characterize the better refrigerator cabinets made by this company.

His witty presentation of this subject interspersed with plain human interest and psychology made his talk one of the most appreciated of all those on the program at this conference.

TAM

OPAX

The real value of an Opacifier is best shown by its effect in the first coat of white enamel.

Opax is today almost universally used for one-coat white enameled ware.

Any deficiency in an Opacifier will quickly show up in this process.

A single coat of Opax enamel covers the blue ground coat with a white that is white.

The significance of this fact to every enamel manufacturer—and the higher the grade of his product, the more significant—is that Opax makes enamel more opaque and whiter than any other opacifier.

THE TITANIUM ALLOY MANUFACTURING Co.

Works at Niagara Falls, N. Y.

CERAMIC MATERIALS DEPARTMENT R. D. LANDRUM, GENERAL MANAGER

6007 EUCLID AVENUE, CLEVELAND, OHIO

DIRECTORS of the General Electric Co., Schenectady, N.Y., have been elected as follows: Gordon Abbott, Boston; Oliver Ames, Boston; George F. Baker, Jr., New York; Anson W. Burchard, New York; Charles A. Coffin, New York; George P. Gardner, Boston; Francis L. Higginson, Jr., Boston; Jesse R. Lovejoy, Schenectady; George F. Morrison, New York; Dwight W. Morrow, New York; Robert Treat Paine, 2nd, Boston; Marsden J. Perry, Providence; Seward Prosser, New York; E. Wilbur Rice, Jr., Schenectady; Philip Stockton, Boston; Bernard E. Sunny, Chicago; Gerard Swope, New York; Burton G. Tremaine, Cleveland, and Owen D. Young, New York. Myron F. Westover, secretary of the company, was selected to the board of directors, filling the vacancy caused by the death of E. R. Stettinius of New York.

* * *

Five thousand Ontarians, including two Scotch Regiments, visited Cleveland, O. on Cleveland-Canada Day, June 11th.

The picture here shows Major W. Mavor, as he appeared at the head of his Regiment in Canada. Major Mavor is now one of the Ferro Enamel Supply Co. folks, and is well-known to many of our readers.

Very few women are as old as their enemies say they are.

ARMCO

INGOT IRON

DAY in and day out, year after year, with ARMCO purer iron sheets, the enameler is enabled to turn out a product that is much more economical to manufacture and easier to sell.

The American Rolling Mill Co.
Middletown, Ohio

Export: The ARMCO International Corp.
Cable Address ARMCO, Middletown

ARMCO INGOT IRON
The Purest Iron Made

Porcelain Enamel Digest

The American Enameled Products Co., 2101 Indiana Avenue, Chicago, has secured the vacant plant of the Transport Truck Co., at Mt. Pleasant, Mich., and will install machinery for the production of mirrors, medicine cabinets and a line of enamel products.

~~~

Cribben & Sexton Co., Chicago, Ill., is installing their third Alumite thin section muffle since the beginning of the year.

~~~

The new enameling plant of the Autoyre Co., Oakville, Conn., has just been completed, by the Ferro Enamel Supply Co., of Cleveland. Porcelain enameled bathroom fixtures are to be produced in this plant.

~~~

H. H. Stephenson, formerly with Chattanooga Stamping & Enameling Co., is now with Vitro Mfg. Co., of Pittsburgh.

~~~

Mr. Wm. Reynolds, of the Scranton Enameling Co., Scranton, Pa. is now with the Richardson & Boynton Co., Dover, N. J.

~~~

Mr. E. J. Hart is no longer with the Portsmouth Stove & Range Co. His present address is 14½ Olive St., Ashtabula, Ohio.

~~~

Our readers will regret to hear of the death of Mr. N. P. Earle, an executive of the Smoot-Holman Co., Inglewood, Calif. Mr. Earle was accidentally killed during the discharge of his duties at the plant.

The bride never marries the best man.

Oxide of Antimony
Highest Grade Chinese

SPOT. Car-load and less than car-load shipments from stock at all times.

FUTURES. Car-load shipments from China arriving regularly.

It will give us pleasure to quote you on any quantity for any delivery.

Metal & Thermit Corporation

Ceramic Department. Homer F. Staley, Manager
120 Broadway, New York City

Food will keep longer if you put a lock on the refrigerator.

We are pleased to report the work of rebuilding the damaged plant of the Dominion Feldspar Co., Rochester, will be completed by August 1st. Their plant was recently damaged by fire, and their new equipment will be modern and efficient in every way.

~

George W. Knapp, Jr., has resigned as plant manager of the National Enameling & Stamping Co. of Baltimore. Mr. J. F. Blackie, we understand, has succeeded Mr. Knapp.

~

Bruce Wagner, who has been with the Connley Mfg. Co. at Cicero, Ill. is now associated with the Emerson-Brantingham Co., of Rockford, Ill. This company is installing an enameling furnace, and will enamel refrigerator linings.

~

Gordon S. Lindsay, who was formerly at the Mellon Institute, is now with The Ferro Enameling Co., of Cleveland.

~

C. T. Aaron, who was with Walker & Pratt Co., Boston, is now with the A-B Stove Co. of Battle Creek, Mich. Mr. Joseph Taylor, formerly of Standard Gas Equipment Co., Baltimore, is taking Mr. Aaron's place at Walker & Pratt's.

~

Vitrified Iron Products Co., at Clyde, Ohio, are installing new furnace, which is their second this year. Ferro Enamel Supply Co. is making the installation.

~

Ingram-Richardson Co. is building an extension to their present enameling plant in Bayonne, N. J.

~

The Fuller & Warren Co., Milwaukee, have placed contract for a six furnace enameling plant.

~

D. A. Ebinger Mfg. Co., Columbus, Ohio have increased their authorized capital stock from $200,000 to $500,000. This plant does both dry process and wet process enameling.

~

OPPORTUNITY WANTED: Young man with good experience in enameling business, and knowledge of cost-accounting. Can take charge small plant. Write Box AC, ENAMELIST.

Usually the more a man's wrapped up in himself, the colder he is

You Should Have This
NEW BOOK

We have just published a very handsome book entitled, "*Men and Methods.*" It will pay you to read it carefully.

It points out the future for porcelain enameling and what we plan to do to help the industry.

This book is free to those interested in the future of porcelain enameling.

Write at once for *your copy.*

"Buy from Bob"

The Ferro Enameling Co.
Cleveland

Many who think they're in the swim are all wet.

In the death of Karl J. DePrez, of the Chambers Mfg. Co., Shelbyville, Indiana, the stove industry has lost a very fine and very progressive member.

Mr. DePrez died in Dallas, Texas, on June 18th, being taken ill on his way home from a business trip to California. He was a graduate of Wabash College, and a founder of the Chambers Mfg. Co., manufacturers of Chambers Fireless Gas Ranges. He became Secretary and General Sales Manager of that Company, and due to his wonderful organization ability, succeeded in carrying the product of his Company into practically every large city in the country in a record period of time. Mr. DePrez was also a very prominent Rotarian, and was president of the Rotary Club of Shelbyville.

~~~

A reproduction of one of the murals in the vestibule of the Administration Building of the Kohler Co., Kohler, Wisconsin. They have five of these murals, done in colors, by Arthur Covey. The one illustrated above is entitled "Tapping a Cupola." The others are "Pouring a Mould," "The Sandblast," "Grinding the Castings," and "Enameling a Bathtub."

~~~

In a recent editorial we asked for suggestions for a new name for enamel. The product of our industry is often confused with paint enamel, dry-process porcelain, etc., which are also advertised as enamel. A. E. R. Westman, Ceramic Department, University of Illinois, suggests "cerامel, cerameler, cerameling," etc. If you have any ideas on this subject, write us a letter.

The Prince of Wales rides horses off and on.

More Than Sixty

Leading Enameling Plants Now Using

NORTH AMERICAN

Oil and Gas Burning

Equipment, *Because*

It operates on low pressure, saving furnace linings and horse power.

Burns the heavier, cheaper, higher heat value fuels without clogging.

Gives an even heat throughout oven, in front and in back.

Is rugged, simple and requires little attention, saving mechanic's time.

Thoroughly atomizes and mixes the fuel with air, cutting fuel consumption.

The Accepted Oil and Gas Burning Equipment in the Ceramic Industry

The North American Mfg. Company

8921 Frederick Ave. **Cleveland, Ohio**

On June 16th, J. T. Robson became the very proud father of a fine baby boy, weighing 6½ pounds. Mr. Robson is very well known in the enameling industry, as he was professor of enameling at Ohio State, and has contributed valuable technical articles to the ENAMELIST and other trade papers. He is now associated with the C. B. Harrop Co., of Columbus, Ohio.

* * *

The Thirtieth Annual Convention of the American Foundrymen's Association will be held in Detroit, on September 27th to October 1st, 1926.

* * *

The Andes Range & Furnace Corp., Geneva, N. Y., are installing new enameling furnace and forks.

* * *

The Iron City (Pa.) Sanitary Mfg. Co. is erecting a new modern foundry. The old building will be used as a shipping and storage unit. C. B. Nesbit is plant manager.

* * *

C. P. Nye, who was formerly plant manager of the United States Sanitary Mfg. Co., is now employed by the Standard Sanitary Mfg. Co., at New Brighton, Pa.

* * *

It is reported the Kohler Co., Kohler, Wis., are contemplating the erection of a sanitary pottery at Kohler. It is said that this plant will be the largest and best equipped of its kind.

* * *

W. E. Andrews, who was formerly with Massillon Stamping & Enameling Co. is now with the Portsmouth Stove & Range Co., of Portsmouth, Ohio.

* * *

J. F. Groebe, formerly with the Buffalo plant of The American Radiator Company is now manager of their Minnesota plant, at St. Paul.

* * *

The Summer Meeting of the American Ceramic Society will be held in Philadelphia on August 30th to September 2nd. Convention headquarters, Bellevue-Stratford Hotel. A big delegation is expected at this meeting, on account of its being held in connection with the Sesqui-Centennial.

* * *

Mr. Paul P. Francais is no longer connected with the Cribben & Sexton Company, at Chicago.

All is simple to a simpleton.

Users Say:

"TONCAN GRIPS ENAMEL"

It's Use Means
More Profit
For You

TONCAN METAL

Reduces Seconds,
Speeds Up Production

Manufacturers of enamelware who have once used Toncan Metal invariably adopt it as their standard enameling base.

The slightly open surface permits a penetration of the enamel which makes it firmly adherent. Clean and free from scale and defects, Toncan does not blister in the enameling process. It's use has reduced "seconds" in hundreds of enameling plants where enamelers desire a uniformly high quality sheet that enamels better.

Try this pure iron in your product. Samples will gladly be sent upon request.

United Alloy Steel Corporation, Canton, Ohio

New York
Syracuse
Cleveland

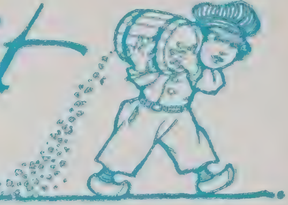
Philadelphia
Pittsburgh

Chicago
Detroit

San Francisco
Indianapolis
Portland

TONCAN ENAMELING SHEETS

Bits of Frit



TAKING NO CHANCES

A suburbanite observed a Scotch neighbor spanking his son with great vigor. Filled with sympathy for the howling youngster, he begged the parent to desist.

"I'll thank ye to mind your ain business," said the father. "I oucht to 'ha kill him for what he did—buying an all-day sucker at five o'clock in the afternoon."—***Pot and Kettle.***

* * *

An honest confession is also good for a front-page story.—***Arkansas Gazette.***

* * *

The make-up of Henry Ford's anti-jazz orchestra, we understand, will not be complete until he can find some one to play the spare parts.—*Life*

* * *

CHEAPER THAN NEW ONES

"Why do you move every year?"

"Because the neighbors have seen all my wife's dresses."

* * *

SIGN IN RESTAURANT

"We don't cash checks. Banks don't serve soup, so don't ask us to cash checks."—***Louisville Satyr.***

You can't clean up in this world with soft-soap. It requires grit.

Because it

1. *Reduces Air costs 20 to 50%*
2. *Gives a Better enameling finish*

Recent tests, made in large enameling plants in Pennsylvania, Ohio, Indiana and Illinois all demonstrated that FLINT SHOT did its best work—

On green ware at 50 lbs. air pressure
On old enamel at 60 lbs. air pressure

In almost every instance these plants had been sandblasting at 80, 85 and 90 lbs. pressure.

By inserting a pressure regulator in their lines, and substituting FLINT SHOT for the abrasives (metal or mineral) they had been using, we were able to *cut air costs* greatly, at the same time, in most instances, *speeding up production.*

That FLINT SHOT gives the metal the *ideal* surface for holding enamel is now so generally recognized that we need not dwell on it here.

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

Somebody is going to back down when the public gets its back up.

HELD IN SUSPENSE

Head Clerk—"Did you hear the ladder fall, Joe?"

Clerk—"Yes, I hope the boss didn't fall, too."

Head Clerk—"He hasn't yet. He's hanging to the top shelf."—*Sporting Goods Dealer.*

* * *

ALL A MISTAKE

From the Iowa Gazette—"A mule kicked George Waterman in the mouth last Thursday. The animal did not mean to kick George. The mule thought George was another mule."—*Country Gentleman.*

* * *

POLITE YOUNG MAN

A stout woman drove up to a filling station.

"I want two quarts of oil," she said.

"What kind, heavy?" asked the attendant.

"Say, young man, don't get fresh with me," was the indignant response.
—*Iowa Frivol.*

* * *

SMALL WORLD INDEED!

Three officers of a New York bank picked up a pleasant-looking stranger at the first tee to make a foursome. After the game he happend to mention that he was a vice-president of the Indoor Trust Company.

"You don't say so? Well now, that's just fine. So am I, and my two friends here. Boys, Mr. Brown here is a vice-president in our bank. Well, well, meeting for the first time out here on the golf course. What a small world! Now, Mr. Brown, we must make it a point to get together again and know each other better. Yes, sir."
—*Nation's Business.*

* * *

"What a novel advertising scheme," he remarked helping himself to one of the blind man's pencils.—*Denison Flamingo.*

The fellow who tries only to look on won't have a look-in.

ASBESTOS PRODUCTS
for Enameling and Allied Industries

Asbestos Fibre
Asbestos Yarn
Asbestos Cord
Asbestos Thread
Asbestos Cloth
Asbestos Clothing
Coats
Pants
Aprons
Mittens
Gloves
Patches

This is the famous reinforced mitt which is being used by the biggest enameling companies in the business. In a comparative test it lasted 100 hours longer than the next best mitt. Let us send you a trial pair.
Also furnished in reversible style, re-inforced both sides.

High Temperature Insulation for Hurricane Dryer and other makes.

High Temperature Blocks also 85% Magnesia Blocks.

Write for descriptive list and prices of full line.

Keasbey & Mattison Company
AMBLER, PA.

Cleveland Office
1160 West 11th St

The Largest Plant of its Kind in the World.
If it's made of ASBESTOS we've got it!

Are You Using Refractories
Suited for *Your* Operating Conditions?

Refractories: "Materials of construction whose major purpose is the confinement or transfer of heat."

It is immediately obvious that in performing such service refractory materials must be chosen with reference to chemical and mechanical properties as well as conductivity.

If fire-clay or other common refractory materials do not completely meet your needs let us prescribe Alundum (fused alumina), Crystolon (silicon carbide) or fused magnesia refractories.

Norton Company, Worcester, Mass.

Group of Standard Alundum Bricks and Special Shapes.

NORTON REFRACTORIES

Your Attention
is Invited

To the latest improvement in
the drying of enameled ware

The
"HURRICANE"
Automatic Method

The automatic conveyor principle of drying assures uniform ware. Every part is subjected to the same drying conditions. Labor is lessened. Steam and power are reduced.

Capacities are guaranteed

The Philadelphia Drying Machinery Co.
Stokley Street above Westmoreland
Philadelphia, Pa.

Canadian Agents:
Ross Whitehead & Co., Ltd.
Montreal

HURRICANE
Ideal Drying Every Day

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.

Sweating Ovens for Profit

THE late Lord Leverhulme, the great English soap magnate, creator of the famous LUX and LIFEBUOY soaps, once declared his belief that more money could be made by manufacturers if they would adopt the 6-hour day for men and the 24-hour day for machines. "Don't sweat your men," said he, "sweat your machines."

Here's a lesson for every Enameler as well. Sweat your ovens for more output per dollar invested—sweat your plant for more production per dollar of overhead.

Brown indicating and recording Pyrometer equipment your burners to know the exact temperatures, and the temperature trend, at all times. Guided by this exact knowledge it becomes practicable to hold the oven to the precise time-temperature cycle known to be most efficient; thus producing ware of maximum quality in minimum time and with minimum fuel consumption.

In a year's time, faster burns mean a substantial increase in output per oven, larger dividends on plant investment and overhead—a more liberal margin for wages to labor.

Address—The Brown Instrument Company, 4592 Wayne Avenue, Philadelphia, Pa., or any of our district offices in New York, Boston, Pittsburgh, Cleveland, Detroit, Chicago, Indianapolis, Birmingham, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City or Montreal.

Brown Pyrometers

A new Edition of this book is now ready!

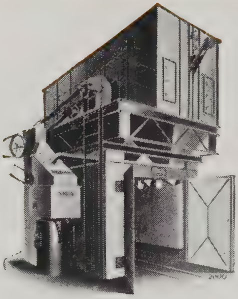
Free copy will be sent promptly on request.

The Enamelist

A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY

SEPTEMBER, NINETEEN-HUNDRED-TWENTY-SIX

Sand-Blasting from Necessity and Sand-Blasting for Profit



Room Sand-Blast with or without Table in end. Cleans all work where segregation is not warranted.

Sand-Blasting is a necessity in the Enameling Industry today.

Sand-Blasting for Profit is another thing; it's more than merely clean surfaces to successfully take enameling. It is your *cost* of cleaning—that few cents on each ton of output *every* day.

Output per hour—and hour after hour—is what makes Sand-Blasting for profit.

There is Pangborn Sand-Blast Equipment specially adapted to every phase of the Enameling Industry. It is the result of 20 years of Sand-Blast building. It is free from stoppages and shutdowns for adjustment and repairs—the secret of *profitable* Sand-Blasting.

Get our Handy Hand-Book on Sand-Blasting. Its free for asking.

Pangborn Sand-Blasts
and Dust Suppression Equipment

Pangborn Corporation Box 853 Hagerstown. Md.

The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

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R. A. WEAVER, EDITOR
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VOLUME 3 SEPTEMBER, 1926 NUMBER 10

Better Business Coming

FIGURES show that the enameling industry, during July, was operating at 71% capacity, while in August, it operated at 77% capacity. This unlooked-for increase in August business is indeed encouraging. It undoubtedly points to an unusual increase for the Fall months, inasmuch as our industry is subject to a mid-summer seasonal decline, starting at the end of May, and usually reaching its lowest point during August.

You will be interested in some of the comments made:

"Better mid-summer business than usual."

"Running 24 hours a day."

"Fall business will be very good."

"Business normal."

"Building ten new furnaces."

"Business very good."

The trend of general business at this time is also very interesting. We quote here Mr. John Hill, Financial Editor of Iron Trade Review:

"It appears that the crest of the building boom has been passed. So far there has been no unfavorable reaction upon the structure of general business. Current freight movements continue to break all records for the season. Meanwhile idle cars are diminishing and the question is being asked whether or not a shortage looms. This is highly improbable, although the margin of surplus cars may be reduced to the narrowest point in some years when Fall traffic gets into full swing."

A man said something was preying upon his mind but it soon starved.

Growth of George D. Roper Corporation

THE Geo. D. Roper Corp. of Rockford, Ill., have recently issued $700,000 of 10-year 6½% Convertible Gold Notes. In the folder describing this issue, Mr. Mabon P. Roper, President of the company has given the following information, which is naturally of great interest to the readers of the Enamelist, as the Roper Corp., was one of the pioneer companies to enamel Gas Ranges, and today operates one of the biggest Enameling Plants in the Gas Stove Industry.

Starting in 1885 with a capital of less than $25,000.00 the business of the company has been built up to its present great size. In 1919 the business of the Trahern Pump Company was acquired and recently the C. B. Babcock Company, manufacturers of gas fired warm air furnaces, was also acquired. The manufacture of Gas Ranges constitutes about 80% of the company's business.

The Roper Company point in their folder to the fact that the production of manufactured gas has increased 100% in the last ten years. The Gas Companies are adding new customers at the rate of 400,000 per year. They estimate that 750,000 gas ranges are installed each year.

The company has had a very interesting earning record as net sales have increased from $1,532,918.57 for the fiscal year ending August 31st, 1922, to $2,443,300.71 for the fiscal year ending August 31st, 1925. The average net earnings for the last three years above all operating expenses including depreciation were $203,957.13. For the year ending August 31st, 1925, the net earnings were $253,447.67, or more than five times the maximum annual interest charge on the new issue of Convertible Notes.

The condensed balance sheet as of Feb. 28th, 1926 shows Land, Buildings and Equipment appraised at $1,296,959.10 with other assets making total assets of $2,800,052.58.

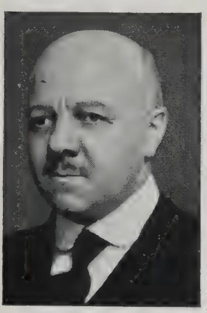
* * *

General Electric Company have installed a small porcelain enameling department at their Works at Schenectady. Installation was made by Ferro of Cleveland.

Wild life isn't disappearing—it is just moving to the city.

Carl Mehling's Triumph

THE fine new enameling plant of the American Radiator Company at Buffalo is a tribute to the experience and ability of Carl Mehling who has managed this company's enameling interests for some years.

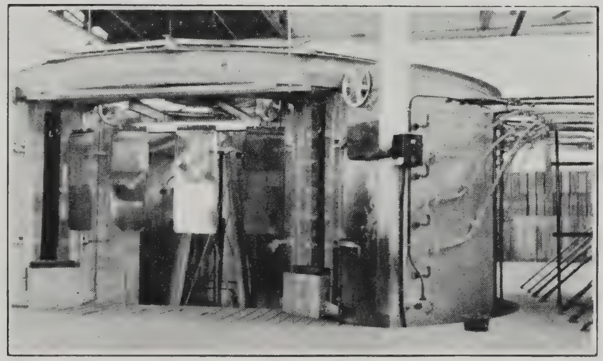


Carl Mehling

The new plant is as continuous as is practicable. The ware is dipped and hung then travels by conveyors through a dryer and to the Manion Rotary Electric Furnace. It is here inspected and hung again on hooks which carry it thru the furnace.

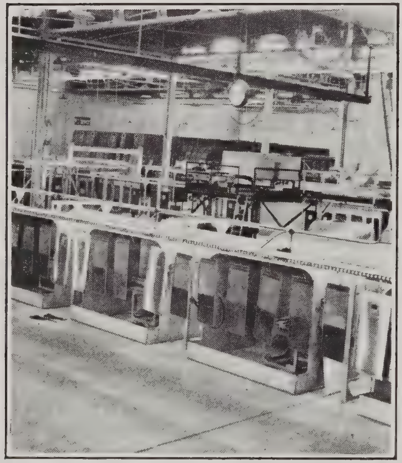
The production on this continuous furnace is enormous, and the cost per square foot for fuel is exceptionally low. After going through the ground coat furnace, the ware is again hung on conveyors, cooled and carried to sprayers.

Again it is hung on conveyors, dried, carried to No. 2 Rotary Furnace where first white is burned. For second white, operation is repeated on No. 3 Furnace.



Manion Electric Rotary Furnace

The road to hell, they say, has no detours.



Continuous Spraying Machines

The plant has numberless excellent features, everything from mill room and pickle room through to inspection, being absolutely the last word in efficiency.

We predict that every efficient shop will soon have a separate furnace for each burning with continuous conveyors carring the work thru the various operations. With this system all pieces are enameled complete in less than four hours, while scrap work is cut to a minimum.

The whole enameling industry must take off its hat to the American Radiator Company and Carl Mehling.

* * *

It is not often that our Enameling Friends have occasion for extra fine trips, but W. J. (Bill) Hoven, Manager of the Enamel Division of The American Stove Company, just returned from one of the finest and most interesting trips we have run across in some time.

His trip took him through the Canadian Rockies and then by boat to Alaska, where he spent two weeks in the Yukon. At Dawson he found the ideal location for an Enameling Plant, because during an entire twenty four hour period, the sun never sets.

You can easily see the advantage of eliminating entirely the night shift by locating your plant up there.

Incidentally, we rise to remark that Mr. Hoven has made the greatest improvement in his Enameling Department since he took charge, that we have ever observed in any plant. It is a model of neatness, efficiency and management. He has developed a number of interesting methods for speeding up production and cutting costs.

* * *

The new plant of the Samuels Stamping & Enameling Company, Chattanooga, is progressing rapidly and they expect to start in work about the first of September.

John Trenke, who is well known throughout the entire country, will have charge of the enameling.

The best safety device is just above the ears.

D. S. Lamb

THE Editorial Offices were brightened considerably the other day by a visit from Mr. D. S. Lamb of The Michigan Enameling Company of Kalamazoo, Michigan.

We had a very interesting visit with him and found that he started his enameling experience with The Bellaire Stamping Company of Harvey, Ill. This was in 1899, but the plant burned down shortly after that and was rebuilt at Terre Haute. It was one of the first Sign Plants in the country, and it is quite interesting to note that Charlie Rankin, who is still with the Columbian Enameling & Stamping Company at Terre Haute, was with the company at that time.

Shortly after this Mr. Lamb became associated with Mr. F. M. Burdick, who was well known as one of the men most interested in manufacturing Porcelain enameled signs. After this he joined the Royal Enameling Company at Des Plaines, Ill., and after that was associated with the Enamel Products Company of Cleveland.

He has been with the Michigan Enameling Company now for fourteen years in Kalamazoo, and has built up a splendid plant, doing very fine work. He has the latest and best equipment and certainly does produce beautiful work.

Mr. Lamb is not only an enameler, but also an Artist, and for many years did most the sketching for the signs they produced. He is always glad to have fellow enamelers stop off and visit him, and we can assure you that you will see a plant well worth while.

Aspire—then perspire.

The Kalamazoo Stove Company Install Model Plant

IN Kalamazoo, Michigan, made famous by their Celery and the slogan "Kalamazoo Direct To You," you will now find one of the finest porcelain enameling plants in the stove business.

H. H. Wolverton, Superintendent

The General Manager of this plant is Mr. J. F. Blakeslee and the Superintendent is Mr. Harry Wolverton, and together they decided to build a plant that would be the last word in efficiency.

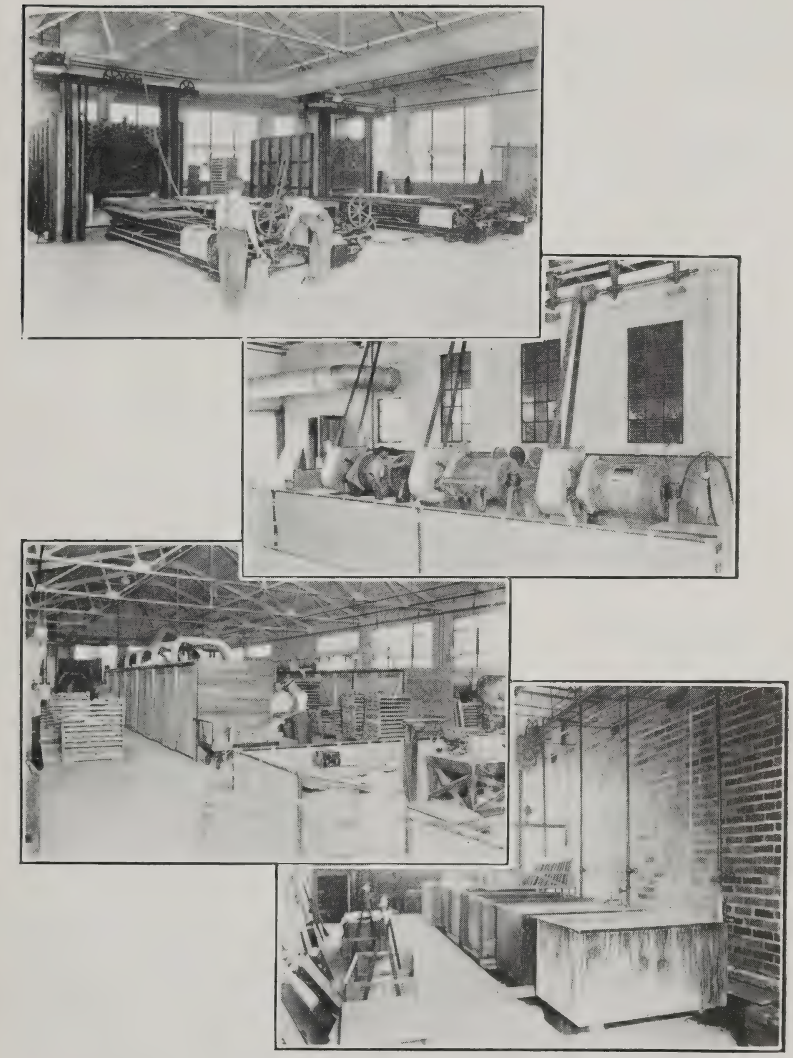
We are illustrating here some views of their plant. They have two of the latest designed Manion Furnaces, with Norton Alundum Muffles and North American Oil Equipment. Each furnace is equipped with the latest type of recuperator, which takes the waste heat from the furnace and delivers it to the special dryers which they have built.

They have the new Ferro Double Quick Fork, which has electric lift and which will easily lift the heaviest load of double deck castings.

Although this plant has only been operating a very short time, they are now producing over 10,000 lbs. of finished castings daily on one furnace with the use of this equipment. On the other furnace, they are doing the necessary steel parts which they use.

You will note, by the picture, the efficient manner in which the mill room and pickle room is laid out. The pickle room is at

Praise in the heart is always tonic for the soul.



Better the shoulder to the wheel than the back to the wall.

one end of the building, with a brick partition between it and the balance of the enameling department. On the other side of the partition, but with only a galvanized railing separating it from the enameling department, they have placed their mill room, and they have the latest style Patterson Mills.

They have spray booths going down each side of the building, one side being used for cast iron and the other side being used for sheet steel. Each department has its own dryer, the work going in from one side and going out other side to the furnaces.

The building itself is ideal for enameling, with plenty of light and plenty of ventilation.

We predict that they will make an unusual record, not only for quality, but for efficiency in this plant.

~~~

Winchester Arms Co., New Haven, Conn. have placed contract for porcelain enameling equipment, for enameling refrigerator linings.

~~~

New York will soon receive its milk supply in tank cars having a capacity of 6,000 gallons each, porcelain enameled inside, and built so as to provide perfect refrigeration. These huge tanks are made by the Pfaudler Company.

~~~

American Rolling Mills for first six months of this year reports net sales of $18,173,306 with net profits of $2,140,819. Amount carried to surplus after interest, federal taxes and dividends was $656,352. Balance sheet showed current assets of $18,085,020 and current liabilities of $3,348,994.

~~~

The Crane Enamel-Ware Co., Alton Park, Chattanooga, Tenn., manufacturer of enameled iron sanitary ware, etc. is said to have preliminary plans under way for the erection of a new unit at its local plant, comprising a main building and smaller adjoining structures, estimated to cost about $400,000 with equipment. The company is affiliated with the Crane Co., 836 South Michigan Ave., Chicago, Ill.

Women get men's wages—on Saturday nights.

A Method For Testing the Cross-bending Strength of Enamels

By R. R. Danielson and W. C. Lindeman

The subject of strength of vitreous enamels is always one of extreme interest and several methods for determining the strength have been proposed. A method for testing the resistance of kitchen ware enamels to impact has been described by Landrum, in which a five-pound weight is dropped a distance of 20¼ inches onto the ware. Various modifications of the impact test have also been suggested by Orton and by Danielson and Sweely.

It will be noted that all these methods are concerned with the resistance of enamels to impact and this is natural since the type of ware to which these tests have been mainly applied usually fail because of stresses received in impact. Such articles, however, as signs and stove parts in the form of flat sheets, probably fail in most cases because of the excessive flexing of the sheets during handling. This type of failure is, therefore, of interest to manufacturers of this class of ware because of breakage encountered at times in the assembling and mounting of enameled parts, and also because of the natural desire to produce ware which will be as free as possible from any inherent tendencies of this sort. How to determine quantitatively, and in a reasonable length of time, what type of enamel or shop practice will give the most satisfactory results in this connection has been a real problem. Bending tests have been suggested but no practical method for applying the load or measuring the flexion has previously been brought forward.

The apparatus shown in Figs. 1, 2 and 3 has recently been constructed for testing the bending strength of porcelain enamels. A transverse load is applied to enameled test plates, 2 x 12 inches and of 22 gage sheet steel. In order to eliminate variations in results due to varying thickness of enamel coating, the test plates are weighed after each coat is applied and fired and only those of a specified weight are used.

As will be noted in Fig. 3, the test plates are placed against stationary bearing supports made from 3-inch pipe, the load

Some men are known by their deeds; others by their mortgages.

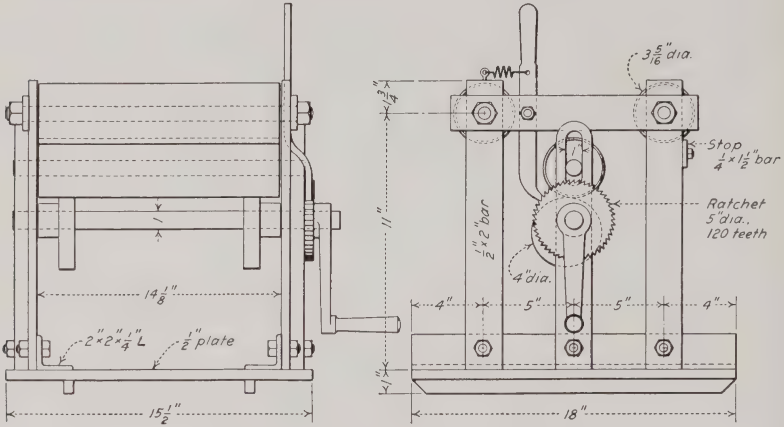


FIG. 1—Sketch of apparatus for cross-bending tests

being applied by a movable 3-inch roller fulcrum, which is raised vertically by an eccentric arrangement operated from a ratchet wheel. The 3-inch circular bearing supports prevent sharp bends and also allow for continual readjustment of the bearing points. The two stationary supports are fixed at 10 inches, center to center, with the movable roller half-way between these points. The enameled plates are placed face side up in contact with the fixed supports and the movable roller is raised until in contact with the under side of the plate. Then, by means of the ratchet, the movable roller is raised the desired distance, each notch on the ratchet giving a vertical rise of about $\frac{3}{64}$ inch. This arrangement places the upper enameled surface in tension and also permits of ready observation of progress of failure during the period of test.

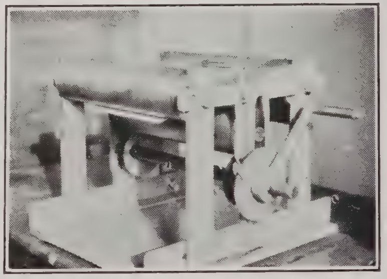


FIG. 2—View of apparatus showing device for raising movable roller

An active tool never grows rusty.

In our tests it has been found advisable to make three notches on the ratchet, the initial elevation of the movable roller, and one notch each interval thereafter. These adjustments are made twice each day and observations are made at each interval for the first appearance of crazing or cracking of the enamel, as well as the point at which the enamel flakes from the plate.

RESULTS OF TESTS ON FOUR WHITE ENAMELS

		Condition of enamels			
Hour when observed	No. of notches raised	Enamel 1, 31.39% feldspar, 8.86% quartz	Enamel 2, 31.39% feldspar, 10.86% quartz	Enamel 3, 29% feldspar, 12% quartz	Enamel 4, 25% feldspar, 16% quartz
5:30 P. M.	3	Good	Good	Good	Good
8:00 A. M.	..	Good	Good	Good	Good
8:00 A. M.	1	Good	Good	Good	Short fine crack
5:30 P. M.	..	Good	Good	Good	Crack lengthened
5:30 P. M.	1	Good	Good	Good	Crack lengthened
8:00 A. M.	..	Good	Good	Good	Crack across plate
8:00 A. M.	1	Good	Good	Good	Crack across plate
12:30 P. M.	..	Good	Good	Good	Enamel flaked
12:30 P. M.	1	Fine crack	Good	Good	Enamel flaked
8:00 A. M.	..	Crack across plate	Fine crack	Good	Enamel flaked
8:00 A. M.	1	Enamel flaked	Enamel flaked	Good	Enamel flaked
5:30 P. M.	..	Enamel flaked	Enamel flaked	Good	Enamel flaked
5:30 P. M.	1	Enamel flaked	Enamel flaked	Fine crack	Enamel flaked
8:00 A. M.	..	Enamel flaked	Enamel flaked	Several fine Cracks	Enamel flaked
8:00 A. M.	1	Enamel flaked	Enamel flaked	Cracks enlarged	Enamel flaked
5:30 P. M.	..	Enamel flaked	Enamel flaked	Additional cracks	Enamel flaked
5:30 P. M.	1	Enamel flaked	Enamel flaked	Additional cracks	Enamel flaked
8:00 A. M.	..	Enamel flaked	Enamel flaked	Additional cracks	Enamel flaked
8:00 A. M.	1	Enamel flaked	Enamel flaked	Enamel flaked	Enamel flaked

Some men grow; others just swell up.

Colored ink, rubbed lightly into the enamel surface, brings out very definitely the first indications of crazing which are not readily apparent.

Typical results obtained with this apparatus are shown in above Table. Four white enamels in which the only changes are in the feldspar and quartz content, as shown, have been applied to ground coated plates and subjected to test. It will be noted that the initial failure occurred in the bending of the plates with readings of from 4 to 9 notches on the machine equivalent to a spring in the plates of from $\frac{3}{16}$ to $\frac{7}{16}$ inch.

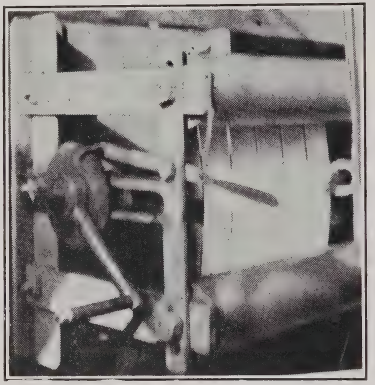


FIG. 3—View of apparatus showing arrangement of test plates

These data have been checked with very satisfactory consistency in the results, and it is quite evident that the machine is sufficiently sensitive to measure cross-breaking strength with the required differentiation for all practical purposes. Sufficient data are not available at this time from which to draw general conclusions as to the effect of replacements of feldspar by quartz and the results are offered merely as indicative of what may be expected in the use of the apparatus. It is only necessary to state that the apparatus has been used successfully for several months to permit of the collection of accurate information on the cross-bending strength of enamel sproduced under factory conditions.

* * *

Keeping up with the trend of the time, the Illinois Refrigerator Co., Morrison, Illinois, is the latest refrigerator manufacturer to break into the porcelain enameling business. Their new enameling department has just been put into operation. Installation was made by The Ferro Enamel Supply Co. of Cleveland.

Dream, but also wake up.

Service, too

The *quality* of A 1 materials has long been established in the minds of the trade.

The *service* that accompanies them is uniformly excellent also.

For your own satisfaction try this combination of quality and service in Ceramic Chemicals, Minerals and Oxides.

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CERAMIC CHEMICALS
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Right direction is more important than speed.

Stove Manufacturer Gives Medal

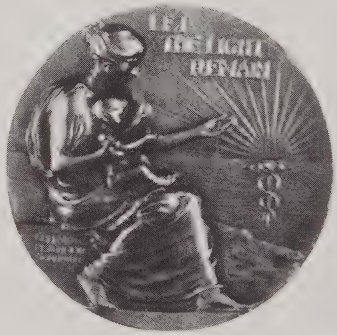
Mr. Leslie Dana

Mr. Leslie Dana, President of the Charter Oak Stove and Range Company, St. Louis, every year awards a medal to the person doing the greatest work for the prevention of blindness. The first award was made in 1925, to Dr. Edward Jackson, of Denver, an author of great national reputation and an authority on proper lighting.

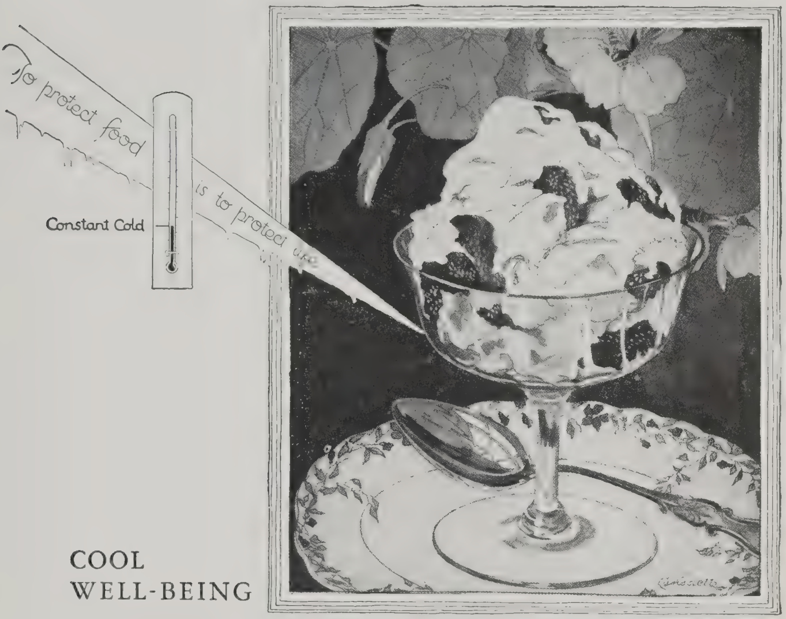
In 1926 the medal was awarded to Miss Louisa Schuyler, who was instrumental in organizing the National Committee for the Prevention of Blindness, and who has done much for the prevention of blindness through social work.

Mr. Dana is a member of the Missouri Associatiou for the Blind, and served as State Commissioner for four years. He became interested in problems dealing with the blind, but soon realized the greatest field of endeavor was for the prevention of blindness and the spreading of that knowledge to the scientific and lay world.

The award is given each year in St. Louis, and occulists and all others interested from all parts of the United States come to the meeting where the award is given.



It is not the leap at the start but the steady going on that gets there.



COOL
WELL-BEING

ICE CREAM is a great American institution. Last year we ordered more than $600,000,000 worth of its cool goodness. Here's the reason—we have discovered that ice cream is far more than a dainty. It holds a health force that sends strength and energy in a tumbling stream through the human body. Its cost is small—its benefits great.

MADE with cold, kept with cold, literally thousands of the best shops are finding that ice cream is guarded best with the dependable, constant cold of electric refrigeration cabinets. In such shops you find it fresh, firm, palatable, just as when made. Your retailer will tell you so.

IN YOUR own home your electric refrigerator will protect the food values and flavor of this lovely food. And it is just this sure protection for all your food supply; meats, vegetables, butter, milk, eggs, that makes the purchase of an electric refrigerator a sound investment in family health.

ELECTRIC refrigeration stops work and makes rest; it stops waste and adds a new factor in efficient housekeeping. The true magic of electricity is this—electricity is a better way of living.

ELECTRIC REFRIGERATION *in* YOUR HOME *means.*

Constant cold—fixed at just the right temperature for food protection.
Cleanliness—so delightfully easy to keep everything spick-and-span.
Economy—after all electricity is one of the cheapest commodities we use.
Convenience—dainty ice cubes for your table.
Dependable—not even a button to push—constant service.

Ask your Electric Light Company or electrical dealer for a fascinating children's booklet, "The Magic Box", illustrated in color, or write us at 522 Fifth Avenue, N. Y. C., enclosing ten cents.

THE SOCIETY FOR ELECTRICAL DEVELOPMENT

A non-profit organization founded in 1912, to promote for the interest of the public and the electrical industry, the greater service of electricity

Electric Refrigeration
-a better way of living

© by Soc. Elec Dev

Few men die after ninety.

Snapped at St. Louis Enamelers' Club Picnic, August 8th

Roy Jaeger is shown in the center. He has evidently just emptied his bucket. Bucket of what? We don't know. Emil Luepke is shown to Mr. Jaeger's right. Looks like the good old days, doesn't it?

* * *

The gentlemen in the rear who are, yes, supporting each other, are Frank Jaeger and Gus Oesterle.

As to America's sense of humor, observe the kind of cars some people put locks on.

This photo was secured by great good fortune, and in spite of the extreme modesty of Ollie Langbein, assistant to Emil Luepke at the Quickmeal plant. The photographer used most of his films before discovering Ollie was kidding about not wanting to have his picture taken. Please note Ollie is looking straight at the camera.

Incidentally, we couldn't get a picture of Ed Eigenbrot, there being no movie camera on the grounds, because Ed was kept busier organizing contests than the enamelers themselves, winning the prizes.

Through the courtesy of Frank Stretch, and the Koken Companies, fine souvenirs were distributed to the ladies present.

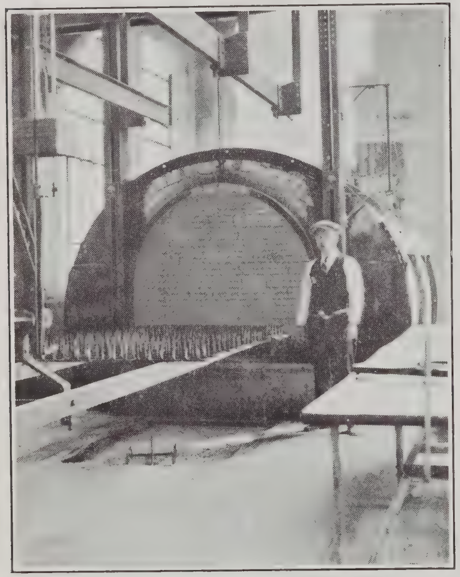
~~~

John Ludwig, of Silica Sign Co., will tell the world it was a good picnic—refreshments, and everything.

Anger drives away the peace of men: pleasant laughter calls it back again.
~~~

New Type Enameling Furnace

HERE is an interesting picture for those interested in Enameling. It shows the Manion Tubular Furnace installed at the Stanley Insulating Company, Great Barrington, Mass. This furnace is completely incased in a tubular steel jacket and the heat loss from the sides of the furnace is the lowest of any furnace we have any record of. At one time when the temperature of the room was 95 deg., the company found that the temperature of the steel jacket at the side was only 145 deg.,which showed only a 50 deg., temperature for the outside of the furnace.

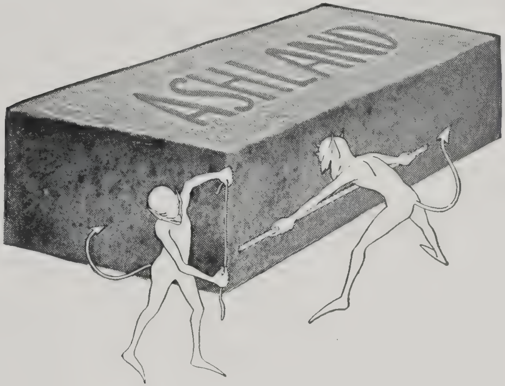


This furnace has Alundum V bottom, but has no side walls or muffle.

It is fired from the back by one oil burner the heat going forward and then going to the top flue by means of two side flues at the front of the furnace. These upright side flues compensate to a certain extent for your door loss.

The top flue is built into the fire-brick arch and is not supported by side walls as is ordinarily the custom with a muffle furnace.

The Floyd-Wells Company of Royersford, Pa., have a furnace of this design, but have incased it in a brick room, so that they can draw what little waste heat there is from the sides of the furnace and use it for drying purposes.



LONGER LINING LIFE

The uniform dimensions of sized Ashland fire brick of Kentucky flint clays leave less chance for heat and slag to seep in and attack the brick work—advantages that are reflected in steady uninterrupted operation, more heats per lining, smaller repair expense and lower service cost

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND, KENTUCKY.

Sales and Service Offices

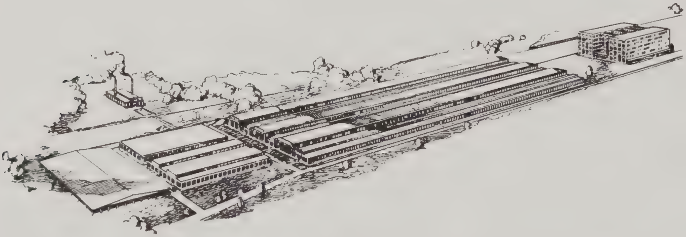
New York
Cleveland
Chicago
Indianapolis
Detroit
Havana, Cuba

You aren't what you think you are, but what you think, you are.

The Glenwood Range Company at Taunton, Mass., and the Tennessee Enamel & Mfg. Co. of West Nashville, Tenn., also have furnaces of this design. They have all found them very satisfactory and it is quite possible that the standard enameling furnace of the future will be of a design like this.

The young gentleman underneath the cap is Clyde Thomas who was formerly associated with the Stanley Insulating Co. Mr. H. M. Badger, Sup't. of the Stanley Insulating Co. is now operating the Enameling Dep't. himself with the aid of one of the men whom he has developed.

* * *



This is how the new Frigidaire plant will appear to the traveler passing through Dayton, Ohio, where "Frigidaire" iceless refrigerators are manufactured, by the Delco-Light Company.

The two six-story buildings in the foreground are each 80 feet wide and 550 feet long. They are 65 feet apart and tied together at the ground floor with a one-story structure. The present one-story plant at Moraine has been utilized in building up the large unit 700 feet farther south.

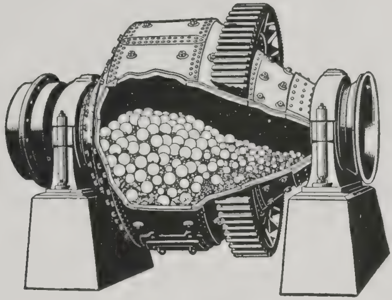
The present plant will be extended 800 feet and another building similar in appearance and construction will be laid down along side it. The total dimensions of the one-story structure will be 480 feet by 2400 feet.

To the south, the company will erect a wood working mill and a lumber storage warehouse, running 800 feet further south.

The power production of the present heating plant will be trebled. E. G. Biechler, president and general manager of the Delco-Light Co. will direct the expansion operations, which will be completed early in 1927.

General Motors officials closely associated with the mammoth project are Alfred P. Sloan, Jr., president of the corporation; C. F. Kettering, a vice-president of General Motors and also vice-President of the Delco-Light Co., and J. L. Pratt, vice-president of the accessories, division of General Motors, of which the Delco-Light Co. is a part.—*Dayton Daily News*.

The easiest thing to lose and perhaps the costliest, is one's temper.



This Will Interest You

A Comparison of Methods for Grinding Enamel Frit

One 4 foot by 5 foot Batch Mill is producing 500 pounds of 100% through 60 mesh in 3 hours. 10 H. P.

One 4½ foot by 16 inch Hardinge Conical Pebble Mill is producing ***1000 pounds*** of 100% through 60 mesh in 3 hours. ***8 H. P.***

Write us and we'll tell you how

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WORKS AND MAIN OFFICE YORK, PENNA.
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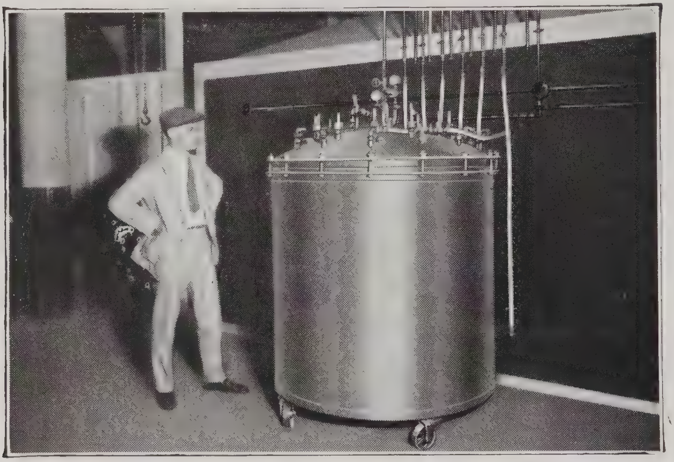
SALT LAKE CITY, UTAH; NEWHOUSE BUILDING
CABLE ADDRESS "HARDINGMIL" NEW YORK

It isn't the gown, but the bill that's stunning.

PEERLESS PRESSURE TANKS

of 15, 30, 60, 100, 200 and 300 Gallon Capacity

Revolutionize Enameling Operations



The above illustration shows a Peerless Pressure Tank in a leading automobile plant. This is a Multi-color Pressure Tank carrying 12 different colors, each agitated separately and supplies 24 spray guns. This same tank is built also for one color only.

Wherever spray finishing requires the application of large quantities of enamel, Peerless Tanks are proving a great factor in lowering production costs.

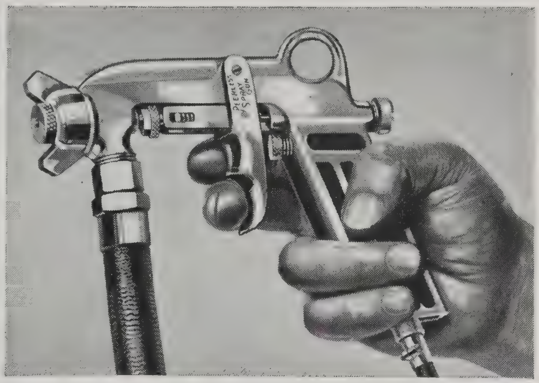
Frequent refilling of bucket containers and the holding up of other operations is no longer necessary. You can now operate one or a battery of Spray Guns from one Peerless Pressure Tank of 15, 30, 60, 100, 200 and 300 gallon capacity.

All parts are of rust resisting materials. The steel tanks have galvanized inner receptacles. The entire cover may be removed for cleaning. A convenient plug in the cover simplifies filling without removing the head of the tank. The enamel is kept in constant motion by a spark-proof motor driven agitator. No special attention is required. Material never can settle. This retains a proper, uniform consistency and enables an even, steady spray on all guns. Whether you operate one spray gun or several dozen guns, get the details regarding this time, cost and labor-saving equipment. Its economy and improved efficiency over older methods will pay for itself quickly. Write today.

Complete Spray Finishing

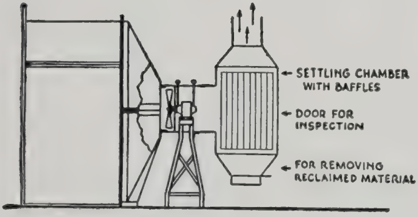
THE PEERLESS SPRAY GUN
for Spraying Heavy Enamels

Examine the "Peerless" and you will see that the Special Heat-treated Steel Nozzle and Atomizing Point is constructed for just that kind of service. The flow of enamel comes in contact with no mechanism except the atomizing needle. This assures dependable flow without ravaging deterioration. If you want a fast gun that will not break or clog, try the Peerless. Then, and only then, will you know its value.



One Manufacturer Has Sprayed 30,000 lbs. (15 tons) of Vitreous Enamel with a "Peerless" Without Repairs!

PEERLESS SPRAY BOOTHS
Have Settling Chambers

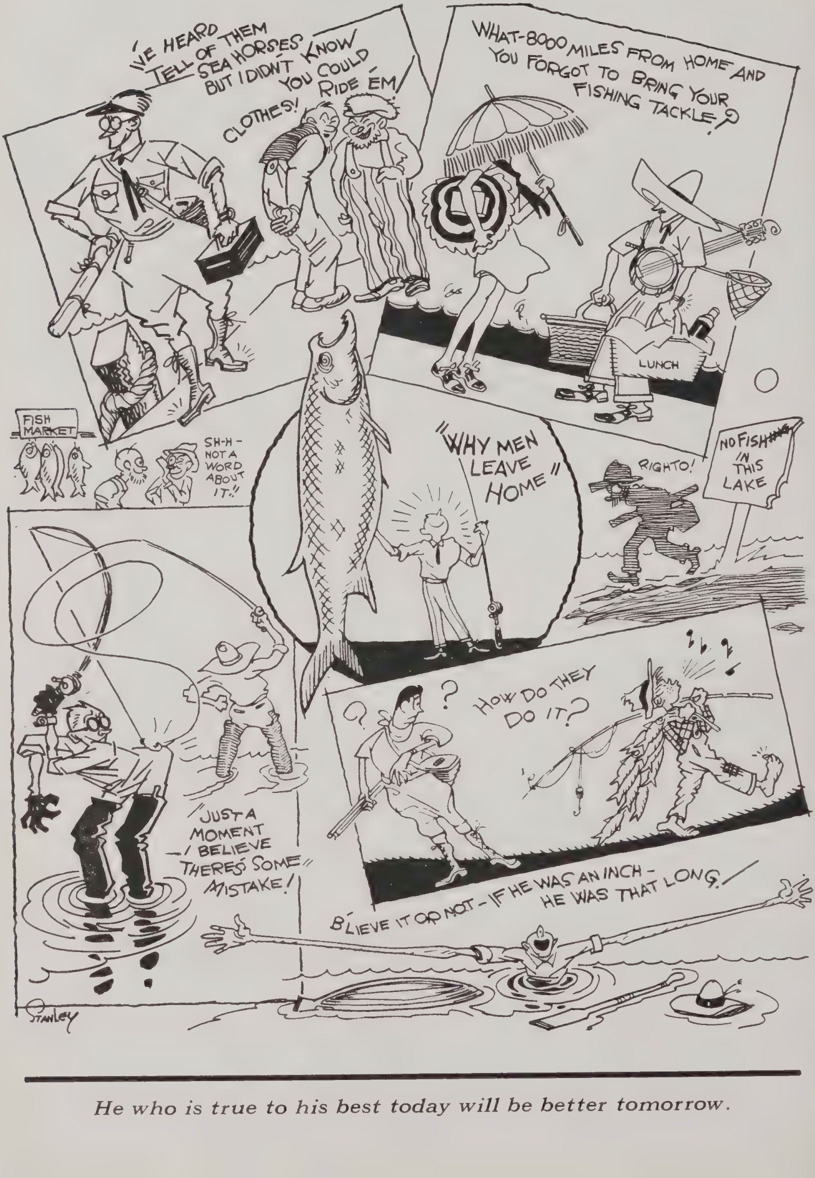

SETTLING CHAMBER WITH BAFFLES
DOOR FOR INSPECTION
FOR REMOVING RECLAIMED MATERIAL

Write for Details on Peerless Vertical Exhaust Spray Booths with Exclusive New Advantages. There is no obligation. Write today!

Peerless Pneumatic Systems, Inc.

112 North Jefferson Street, Chicago
(*Offices in Principal Cities*)

Equipment for Enameling Plants

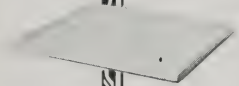

I'VE HEARD TELL OF THEM SEA HORSES BUT I DIDN'T KNOW YOU COULD RIDE 'EM!
CLOTHES!
WHAT-8000 MILES FROM HOME AND YOU FORGOT TO BRING YOUR FISHING TACKLE?
LUNCH
FISH MARKET
SH-H- NOT A WORD ABOUT IT!!
"WHY MEN LEAVE HOME"
RIGHTO!
NO FISH~~ING~~ IN THIS LAKE
HOW DO THEY DO IT?
"JUST A MOMENT - I BELIEVE THERE'S SOME MISTAKE!"
B'LIEVE IT OR NOT - IF HE WAS AN INCH - HE WAS THAT LONG!
STANLEY

He who is true to his best today will be better tomorrow.

LOWEST IN ULTIMATE COST

TONCAN
METAL

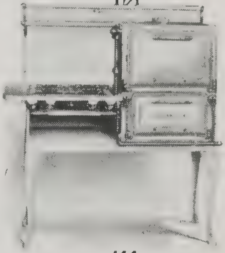
THE CHOICE
OF PARTICULAR ENAMELERS



In the large field of Toncan Metal users are hundreds of leading manufacturers of enameled products. They have found that the most economical base metal which can be used is the one which produces the highest possible percentage of perfect enameled parts. Consequently, they have turned to Toncan.

Your plant will benefit by the enameling economies which others have found in Toncan. You will find every sheet smooth and clean, free from scale, blowholes and laminations. By the reduction of seconds, unnecessary waste will be eliminated, production increased, and the high quality of your enameled products will make them easier to sell.

Some inferior base metals may be lower in first cost, but none can be lower in ultimate cost than Toncan. Send for samples and make your own comparative tests



United Alloy Steel Corp., Canton, Ohio
New York, Cleveland, Chicago, Pittsburgh, San Francisco
Detroit, Syracuse, Portland, Philadelphia, Indianapolis

TONCAN
METAL

TONCAN ENAMELING SHEETS

Porcelain Enamel Digest

THE increase in the amount of Porcelain being used on Electric Refrigerators, makes an item of news regarding the Ice-less Refrigerator Industry quite interesting to the Enameling Trade.

In a recent advertisement we notice a new issue of $3,000,000.00, First Mortgage 6% Real Estate Sinking Fund Gold Bonds, by The General Necessities Corporation of Detroit.

The business of the General Necessities Corporation was established in Detroit over twenty-five years ago. It supplies over 65% of all the ice used in the city, and in addition to Absopure Electric Refrigerator, this company is engaged in kindred lines.

During the five year period, the company has averaged $871,780.00 per year.

This is evidently a well organized substantial company and should make good competition for the other Ice-Less Refrigerator Producers.

* * *

A. Weiskittel & Son Company, Baltimore, Md., manufacturer of stoves and castings, is having plans made for a 3-story addition to their plant.

* * *

Carl Mehling is adding still another new department to his enameling plant at American Radiator Company. This is a new Sand Blasting Department. A fine well-lighted building will be devoted to this department, with capacity for blasting 200,000 pounds of castings per day. Mr. Mehling is also installing a completely-equipped laboratory.

* * *

C. L. Dudney, formerly with Chattanooga Stamping & Enameling Co. is now with the Kalamazoo Stove Co., Kalamazoo, Mich.

* * *

Somerset Stove Foundry, Somerset, N. J. have discontinued their business.

A shady business never yields a sunny life.

ALUNDUM ABRASIVE FOR POLISHING

Uniform in grading and quality it makes possible more and better production.

Because the electric furnace process of manufacture is under absolute control, uniformity in the quality of Alundum abrasive is certain.

Because of an entirely new and exclusive milling and screening process a grain more uniform in size, in shape and in strength is produced.

Thus it is that Alundum abrasive for polishing is the recognized standard for dependability and economy.

NORTON COMPANY, WORCESTER, MASS.

New York Chicago Detroit Philadelphia Pittsburgh
Norton Company of Canada, Limited Hamilton, Ontario

TRADE NORTON MARK

This picture shows the new home of the Ceramic Engineering Department of North Carolina State College. Although the class rooms and office of the Ceramic Engineering building has been in use since last January, the finishing touches are only now being put on the laboratory sections.

The fitting up of this new building has been done under the direction of Prof. A. F. Greaves-Walker, head of the Department, and Prof. G. A. Shelton, Ass't. Prof. of Ceramic Engineering. The Department is expecting a large enrollment this Fall.

* * *

Mr. Frank Jaeger, Superior Enamel Products Co., St. Louis, states he is getting 100% increased production, without any increase in burning time, burning his ware double decked. Mr. Jaeger has installed new tunnel dryer, with conveyor, double spray booths, and is making other changes for increasing production.

* * *

The Ferro Enameling Company of Cleveland are adding a finely equipped experimental laboratory to their plant, and have also recently added new graining department. They have also increased their drying and mixing departments.

* * *

C. P. Nye is now Superintendent of the enameling dept. of The Barnes Mfg. Co., Mansfield, Ohio. Mr. Nye has had nearly twenty years' experience in large sanitary ware companies, and will, we know be very successful in his new work.

* * *

Announcement was recently made of the marriage on May 30th of Jos. F. Karr, Belleville, Illinois, to Miss Juanita Jones, at Robinson, Ill.

* * *

Clyde Thomas, formerly with Stanley Insulating Co. is now with Kalamazoo Stove Co., Kalamazoo, Mich.

It is better to be in love with your work than in love with yourself.

One Flint Shotting takes the Place of Two Sandblastings in Large Sanitary Ware Plant

Its practice had been to sandblast (using a commercial Ohio sand) first for rough cleaning, followed by a second blasting to prepare the cast-iron bath tubs for the ground coat—80 lbs. air pressure being used in both blasts.

Our staff engineer introduced a pressure governor in the air line, reduced pressure to *sixty* pounds, filled the tank with FLINT SHOT, and delivered finished hubs, ready for the ground coat in *one* blasting.

Here was a case where the sandblasting department had been the "neck-of-a-bottle." By *doubling* output of this department we rendered an inestimable service to the company, beside cutting their power bill about 40%.

This is typical of the constructive work we are doing all over the country.

Write for particulars.

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

Stories of divorce cases are best told by a "Special Correspondent."

FUEL OIL DATA

As a general rule twenty-four to twenty-six gravity oil should be used for heating porcelain enameling furnaces. This oil is probably the best grade to use, considering heating value per unit and low consumption costs. Using this grade of oil, it is necessary to heat the oil in the tank in the winter time in order to have sufficient fluidity to pump it. It is not necessary to heat this oil in the summer time, in the main supply although if you heat it winter and summer, you will have more constant operation of the oil.

Where oils lighter than 30 deg. Baume are used it is not necessary to heat them, in fact, most users who have no facilities for heating (steam) will use a fuel that runs between 30 and 32 deg. Baume and get very good results. In extreme cold weather, however, even this oil will congeal to some extent and in such cases, the only recourse without steam heating is to use a distillate which runs 34 to 36 and even 38 deg. Baume. Of course, this is very expensive oil to use, especially for industrial jobs, other than for very small fires.

As stated before, it is preferable to use an oil between 24 and 26 gravity. Outlined below is a table showing the temperature to which different oils must be heated for best results.

Deg. Baume	24–30	20–24	17–20	15–17	14–16	11–13
Deg. Fahr.	80–100	100–140	140–160	180–190	200–220	220–240

* * *

Six leading members of the electric refrigeration industry recently subscribed, through the Society for Electrical Development, a large sum of money for the promotion of electric refrigeration. One of a series of their Saturday Evening Post ads is being shown in this ENAMELIST.

The Society for Electric Development states: "In addition to a large amount of national advertising, the electric refrigeration program includes original research, to determine facts about food protection, etc. The initial fund has been subscribed by the following Companies: Delco-Light Company, Kelvinator Corp., Nizer Corp., Servel Corp., General Electric Co., and Copeland Products, Inc."

* * *

Hanks Stove & Range Company, Rome, Ga., will enlarge its plant, including construction of a new warehouse plant.

* * *

The Walker & Pratt Company of Watertown, Mass., are installing a very modern two-furnace enameling plant.

A clean conscience is better than unclean cash.

M and T

Tin Oxide
is Uniform in Quality

For five years we have been shipping tin oxide regularly to a long list of customers.

In all this time, the material has been of such uniform high quality that we have not received a single complaint of variation either in quality or working properties—and these oldest customers are continually recommending its use to others.

A good article sold at a fair price
will find an ever widening market

Metal & Thermit Corporation

Ceramic Department

Homer F. Staley, Mgr. R. R. Danielson, Director of Research

120 Broadway, New York City

No parking signs have taken the place of hitching posts.

The Biggest Buyer
of
cast iron enamels
in the world buys
Ferro Enamels
exclusively.

We would like to send you our Equipment Catalog, our Blue Book and other interesting literature. Sent free on request.

"Buy from Bob"

The Ferro Enamel Supply Co.
Cleveland, Ohio

The way of a man with a maid is first-page stuff.

The Biggest Buyer
of
sheet steel enamels
in the world buys
Ferro Enamels
exclusively.

The reason for this and for the great growth in Ferro sales is explained in our book "Men and Method." Send for it—its free.

"Buy from Bob"

The Ferro Enamel Supply Co.
Cleveland, Ohio

Luck hovers 'round the man who smiles.

A CLOVER CHAMPION

Chas. S. Kinnison

On the golf course, I'm a hummer—
There can be no one that's dumber.
I'm the wildest little golfer
Who has ever swung a club.
You should see the way I twist 'em!
(I remember *twice* I've missed 'em)
I confess that on the golf course
I'm a first-class champion dub.

But my heart is gladly singing,
In the backyard, when I'm swinging—
For the way I clip the clovers
Fills my heart with joy sublime.
In the backyard I'm a wonder—
I'm a cracker-jack, by thunder!
I'm the champion clover clipper—
I can snip 'em every time!

There, my form is near perfection—
It deserves your close inspection—
If you want to be a golfer
You should pattern after me.
Man, oh man, but I can smack 'em,
Like a champion I can crack 'em!
(I am speaking still of clovers,
Not of golf balls—No, siree!)

In the backyard, I am thinking
Of the shots that I'll be sinking
When I get upon the golf course—
I will be a gleaming star,
And the boys will loudly cheer me!
But, alas—they only jeer me.
But if I could use a clover,
I could shoot 10 under par!

* * *

Gordon S. Lindsay, formerly associated with Mellon Institute, is now with The Ferro Enameling Co. of Cleveland.

* * *

R. L. Foraker, formerly with Coonley Mfg. Co., Cicero, Ill., has accepted a position with Cribben & Sexton Company.

Lots of rocks help to make a firm foundation.

The Trend of Favor

Toward Opax is most convincingly shown by the constantly growing list of enthusiastic users. An earnest trial quickly proves that

1. *Opax gives more opacity per pound than any other opacifier.*
2. *Opax requires no change in your process or equipment.*
3. *Opax creates additional profits by lowering the percentage of redips and seconds.*

Opax costs 30 cents a pound—the raw material is mined in this country—the price does not fluctuate.

That the many advantages of Opax have created a remarkable place for this comparatively new product in the vitreous enameling field is most conclusively expressed by these figures: Users have increased 534%, and deliveries 968% in the last year

T.A.M.
OPAX

Right now is the time to try Opax,
for the busy season is coming.

THE TITANIUM ALLOY
MANUFACTURING Co.
Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT R. D. LANDRUM, GENERAL MANAGER
6007 EUCLID AVENUE, CLEVELAND, OHIO

We are indebted to the Frost Permanent Waving Co. for the use of the drawing on the cover of this ENAMELIST.

* * *

R. L. Foraker, formerly of the Coonley Manufacturing Company, is now associated with the Cribben and Sexton Company at Chicago, in their Enameling Department.

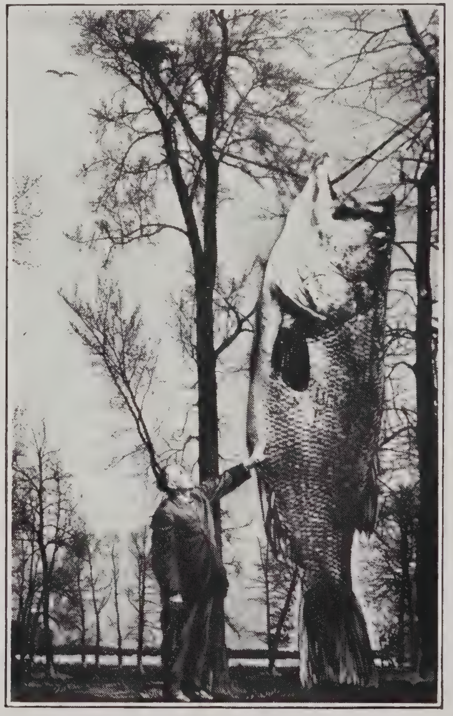
* * *

A new porcelain enameling department has just been installed for the Autoyre Co., of Oakville, Conn. C. W. Mosgrove has charge of the department, and Geo. Cruickshank is the enameler. Installation was made by Ferro of Cleveland.

* * *

We'll give a prize to any enameler who can beat this one.

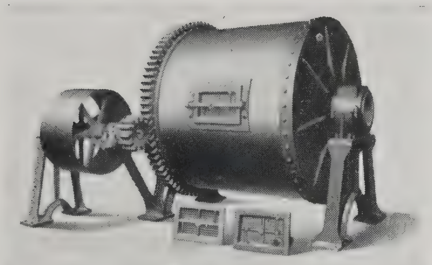
The fish must be landed without the aid of a cannon.



Our patience will achieve more than our force.

SATISFACTORY PATTERSON MACHINERY

Grinding Room Service
FOR YOU



THE NEW PATTERSON TYPE "D" PEBBLE MILL

PATTERSON
Type "D" Pebble Mill

Sizes from 40 to 3000
pounds capacity,
belt and special motor
drives.

Catalogs on request.

Our service department carries large stocks of Porcelain Silex Mill Liners, Flint Pebbles, Porcelain Balls, Wire and Silk Cloth. Send for samples and prices.

The Patterson Foundry & Machine Co.
General Offices and Factories, East Liverpool Ohio
Los Angeles New York

"Grind in a Patterson Mill"

The American Enamel Works, Nashville, Tenn. has gone out of business.

~ ~ ~

Due to the rush of business, we are sorry to note that John Bardusch was unable to take his annual fishing trip, which is the first one he has missed in years.

~ ~ ~

The many friends of Carl Schwier of the Mansfield Vitreous Enameling Company, will be mighty glad to know that he is back at work, after a number of months illness.

~ ~ ~

James Loughead, formerly with the Michigan Enameling Company. and with a great deal of experience in the enameling business, is now in charge of the new Enameling Department of the Kalamazoo Stove & Range Company, Kalamazoo, Michigan.

~ ~ ~

The Ferro Enameling Company of California, Oakland, Calif., was recently represented at an Exhibit, held by the Oakland Chamber of Commerce, showing the products of new Oakland industries. H. B. Naylor is manager of the Ferro California plant, and A. F. Stein enameler.

~ ~ ~

The Leonard Refrigerator Division of the Kelvinator Corporation will immediately build a large new enameling department, to take care of the increased business on Kelvinators. They expect to install four electric furnaces with continuous conveyors and dryers. They will undoubtedly have one of the finest plants in the country when the work is completed.

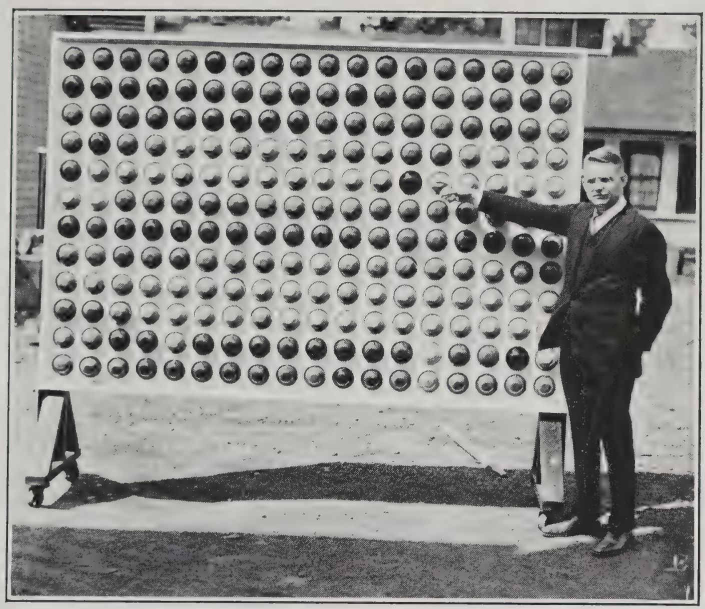
~ ~ ~

A broken oil pipe was responsible for a $50,000 fire, recently, in the plant of the Southern Malleable Iron Co., E. St. Louis.

The plant, formerly known as the Durbin foundry, has been owned by the Southern Malleable Iron Company for two years. Its officers are: B. B. Culver, president; E. R. Culver and R. S. Bradshaw, vice presidents; W. C. Borgstede, secretary; L. H. Winter, treasurer. Its capital stock is $225,000.

Machinery and wooden dies form the largest loss of the company.

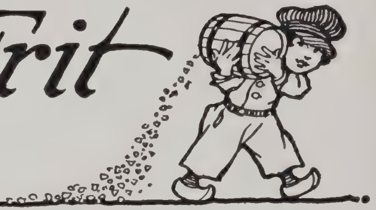
I don't care how much a man says as long as he says it in a few words.



"Drakenfeld's No. 100 Black Oxide is the strongest and best black oxide on the market."

B. F. DRAKENFELD & CO., INC.
50 Murray Street
NEW YORK CITY

Bits of Frit



ANOTHER NAME FOR IT

"I see in the paper that a widower with nine children out in Nebraska has married a widow with seven children."

"That was no marriage. That was a merger."—*Washington Post.*

* * *

A TRIFLE IRATE

On a farm in South Georgia is posted this sign: "Trespaser's will be persekuted to the full extent of 2 mean mongral dorgs which ain't never been ovarly soshibil with strangers and 1 dubble barrel shot-gun which ain't loaded with no sofy pillers. Dam, if I ain't tired of this hel raisin on my proputy."—

—*Tex. Util. News.*

* * *

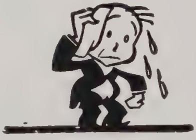
THE SPENDTHRIFT'S PACE

First Aimless Shopper (to second ditto)—"Well, dear, if you're not going to buy anything, we might just as well look at something more expensive."

—*The Humorist (London.)*

* * *

HOT LEAD—COOL LANGUAGE



A spinster living in a London suburb was shocked at the language used by two men repairing telegraph wires close to her house.

She wrote to the company on the matter, and the foreman was asked to report.

This he did in the following way:

"Me and Bill Fairweather were on this job. I was up the telegraph pole, and accidentally let the hot lead fall on Bill. It went down his neck. Then he said, 'You really must be more careful, Harry.' "—*Tid Bits.*

Jay thinkers are sometimes worse than jay walkers.

This cross-section micrograph of enameled ARMCO Ingot Iron reveals clearly its tooth-like surface—the kind of surface that firmly grips a porcelain enamel coating.

Look through the microscope and see for yourself

EXAMINE a cross-section of vitreous enameled ARMCO Ingot Iron under the miscrocope and you will see plainly one of the big advantages of this pure iron for enameling. It has a tooth-like surface which grips and holds enamel—a feature that also assures even distribution.

Cull loss from blisters and pinholes is minimized with ARMCO Ingot Iron. This is due to a special ARMCO process which virtually degasifies the iron.

ARMCO Enameling Stock is a definite grade, made for a definite purpose, and required to pass rigid inspection before it is permitted to leave the mills. This means that every sheet will possess the same uniform quality—a big factor in producing consistently perfect enameled pieces, year after year.

The American
Rolling Mill Company
Middletown, Ohio

Export: The ARMCO International Corporation
Cable Address:
ARMCO, Middletown

ARMCO TRADE MARK **INGOT IRON**
The Purest Iron Made

As the rector was leaving a temperance meeting, he encountered one of his flock considerably the worse for drink.

"Oh, William!" he exclaimed. "I'm surprised to find you in this state. I'm sorry! I'm sorry—very sorry!"

"Well," muttered the man, "if you're really sorry I—I forgive you."

—*Weekly Telegraph* (*London*).

* * *

AFTER THE LECTURE

Late-comer—"Give me the gist of his remarks."
Survivor—"They were gist terrible."

* * *

"My boy, if you didn't drink you'd be a corporal by now."
"But, Colonel, when I drink I feel like a General."—*Pasquino* (Turin).

* * *

Little Boy (a frequenter of the cinema)—"Say, Ma, if you can't see your way to give me sixpence my love will turn to a fierce hate!"—*Passing Show*.

* * *

Dumb-bell—"How old are you?"
Bar ditto—"Twenty."
D. B.—"Aw, you're more'n that."
B. D.—"Well, I should have been twenty-two,but I was sick two years."

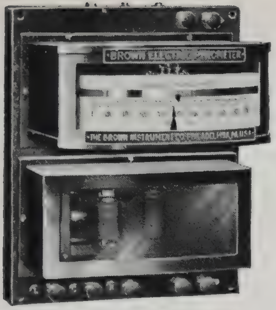
—*Oregon Orange Owl*.

* * *

Two men who had been married about the same time met after some months. One asked the other how he liked married life.

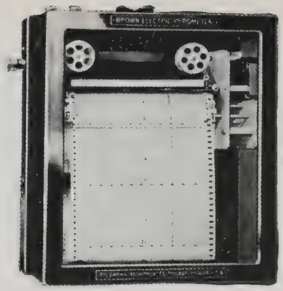
"Fine," was the reply. "My wife's an angel." Said the other. "You always did have all the luck. I've still got mine."—*Tid-Bits*.

The man who wakes up and finds himself famous hasn't been asleep.



A—Control Indicator

B—Control Recorder



Automatic Temperature Control

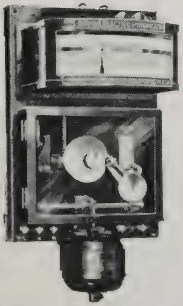
Increases Capacity of Furnaces and Men

Brown Automatic Furnace Control increases the output of even the most competent burners—and decreases the spoilage of even the least competent. Brown Automatic Control by speeding up burns increases yield on furnace investment—quickens capital turnover.

Brown Automatic Control installations have earned the confidence of the industry by their dependable fitness for practical enameling service. Write for performance data and Catalog No. 15—the Brown Pyrometer Catalog.

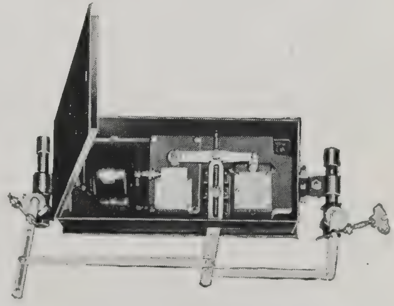
Address The Brown Instrument Company, 4593 Wayne Ave., Philadelphia, Pa., or one of our District Offices in New York, Boston, Pittsburgh, Cleveland, Columbus, Detroit, Chicago, Indianapolis, Birmingham, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City, Montreal.

Brown Pyrometers



C—Time Cycle Control Indicator

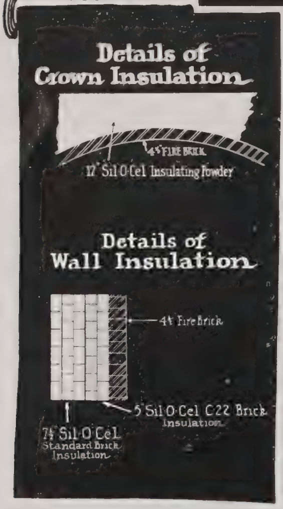
D—Automatic Control Valve



SIL-O-CEL

TRADE MARK REGISTERED U.S. PATENT OFFICE

HEAT INSULATION


Details of Crown Insulation
4½" FIRE BRICK
12" Sil-O-Cel Insulating Powder
Details of Wall Insulation
4½ Fire Brick
5 Sil-O-Cel C22 Brick Insulation
7½ Sil-O-Cel Standard Brick Insulation

Approved

Look into the catalogues or examine the blueprints of the leading furnace manufacturers of the country. Almost without exception you will find provision for Sil-O-Cel insulation in the plans.

Carry on your investigations in any other field you choose. Practically every tunnel kiln designer, you will discover, insulates the equipment he builds, with Sil-O-Cel.

The outstanding power plants in America are Sil-O-Cel insulated. In the most modern equipment employed in glass manufacturing plants Sil-O-Cel is used to improve temperature control and decrease fuel consumption.

In iron and steel plants, cement mills, malleable plants—everywhere, in fact, where heat is used Sil-O-Cel insulating materials have earned recognition and preference.

A section of a Holcroft Electric Furnace in the plant of Hudson Motor Car Co., Detroit, is pictured above. Sil-O-Cel powder in the crown and Sil-O-Cel Standard and C-22 brick in the walls make this furnace a veritable "prison for heat"

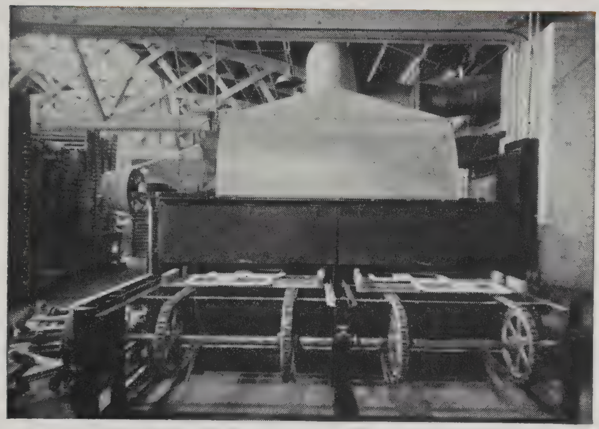
CELITE PRODUCTS COMPANY

11 Broadway · · New York
53 W. Jackson Blvd · Chicago
1320 S. Hope St · Los Angeles
140 Spear St · San Francisco
OFFICES AND WAREHOUSES

Celite Products · Limited
New Birks Bldg · Montreal · Que.
Celite Products Corporation
147 Windsor House · Westminster — London · Eng.
IN PRINCIPAL CITIES

Why a "HURRICANE" Enameled Ware Dryer

Justifies the Investment



"Hurricane" Dryer for Enameled Ware

The "Hurricane" Enameled Ware Dryer has proven a good investment in quite a number of representative plants.

It speeds up production by decreasing the drying time. It saves floor space and labor. Most important of all, it improves the quality of the product by the uniform drying and elimination of wet spots.

Investigate the large returns, with safety, where the "Hurricane" system is being used on table tops, refrigerator linings, kitchen ware, and cast iron and sheet metal stove parts.

The Philadelphia Drying Machinery Co.

Stokley Street above Westmoreland **Philadelphia, Pa.**

Special Agents:
Ferro Enamel Supply Co.
Cleveiand, Ohio

HURRICANE
Ideal Drying Every Day

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.

IN the first six months of 1926 we shipped almost as much Ferro Enamel as during all of 1925.

This year will certainly *Double* 1925 business

The enamel industry wants the best and Ferro Enamels are best.

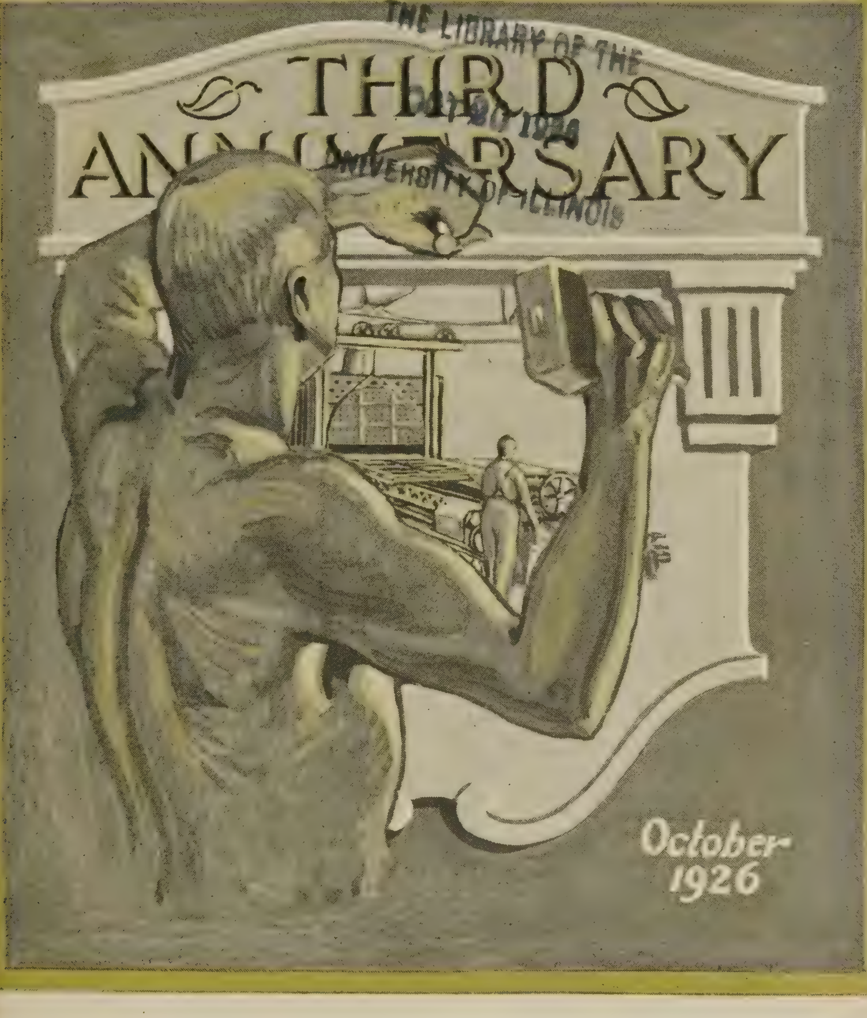
"Buy from Bob"

The Ferro Enameling Company
Cleveland

EN ceramics

The Enamelist

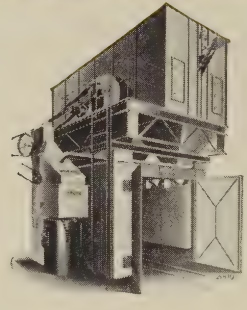
A TRADE PAPER FOR
THE PORCELAIN ENAMEL
INDUSTRY



October
1926

THE LIBRARY OF THE
OCT 30 1926
UNIVERSITY OF ILLINOIS

Sand-Blasting from Necessity and Sand-Blasting for Profit



Room Sand-Blast with or without Table in end. Cleans all work where segregation is not warranted.

Sand-Blasting is a necessity in the Enameling Industry today.

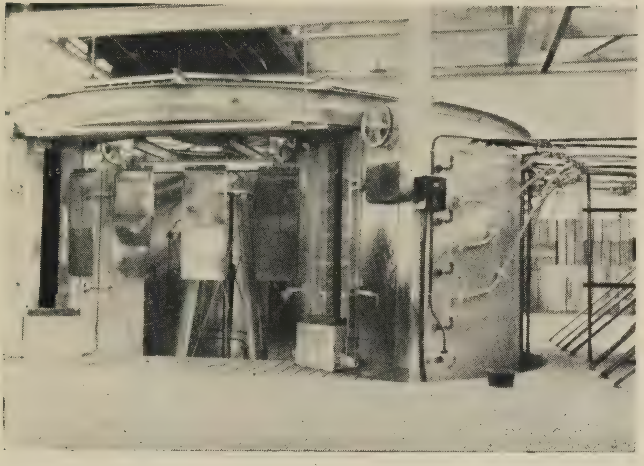
Sand-Blasting for Profit is another thing; it's more than merely clean surfaces to successfully take enameling. It is your *cost* of cleaning—that few cents on each ton of output *every* day.

Output per hour—and hour after hour—is what makes Sand-Blasting for profit.

There is Pangborn Sand-Blast Equipment specially adapted to every phase of the Enameling Industry. It is the result of 20 years of Sand-Blast building. It is free from stoppages and shutdowns for adjustment and repairs—the secret of *profitable* Sand-Blasting.

Get our Handy Hand-Book on Sand-Blasting. Its free for asking.

Pangborn Sand-Blasts
and Dust Suppression Equipment
Pangborn Corporation Box 853 Hagerstown. Md.



For the New American Radiator Furnaces

"ALUMITE"
REFRACTORIES

were selected, due to their previous satisfactory service and exceptional long-livity.

"ALUMITE" Smelter Brick are also giving the same highly efficient service in their Smelting Furnaces.

May we assist you?

Send for Bulletins Nos. 23 and 24

The Massillon Refractories Co.
(Founded by W. G. Hipp)
Massillon, Ohio
On the Lincoln Highway—Convenient for Truck Delivery

TAM

OPAX

Curiosity and Cash

The leaders in the enameling industry accepted Opax two years ago as a curiosity, for experiment. They obtained results that have standardized Opax as an Opacifier in their plants.

From their tests as to economy, ease of use, opacity with one coat, freedom from redips and seconds, and other advantages compared with any other *opacifier, the use of Opax in all branches of the enameling industry has expanded tremenduously.*

Now Opax is making money for its users in three ways: lower cost, better quality, greater production, As a domestic product, it is always available, in any quantity, at a flat price of 30c a pound in barrels.

*Opax is bought—not sold. Every Enameler who has made an intelligent trial is buying Opax regularly. You—*you, *will never know what others are enjoying until you prove Opax. What about a trial lot at once?*

THE TITANIUM ALLOY MANUFACTURING Co.

Works at Niagara Falls, N. Y.

CERAMIC MATERIALS DEPARTMENT R. D. LANDRUM, GENERAL MANAGER
6007 EUCLID AVENUE, CLEVELAND, OHIO

The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

PUBLISHED BY
THE ENAMELIST PUBLISHING COMPANY
2100 B. F. Keith Building Cleveland, Ohio

R. A. WEAVER, EDITOR

Subscription $1.00 a year Copyright Registered Single copies, 10 cents

VOLUME 4 SEPTEMBER, 1926 NUMBER 1

Celebrating An Anniversary

NEXT to the satisfaction one gets for oneself out of doing a good job, the most pleasing sensation is the approval of our friends.

The Third Anniversary of the ENAMELIST, the only trade paper published exclusively for the porcelain enameling industry, finds the Editor in receipt of a thick sheaf of letters from readers. These messages of congratulation leave no doubt that the ENAMELIST has established a real place for itself in the publishing field, and that with the turn of each year its usefulness is being more widely recognized.

On the occasion of the seventy-fifth anniversary of The New York Times, which occurred this year, Adolph Ochs, the proprietor, said that the Times had always confined its editorial content to informative news. He asserted that this news, including market reports, was so valuable to many readers that they would pay $100 a copy for the paper if its contents could be obtained from no other source. Yet the Times is sold for two cents.

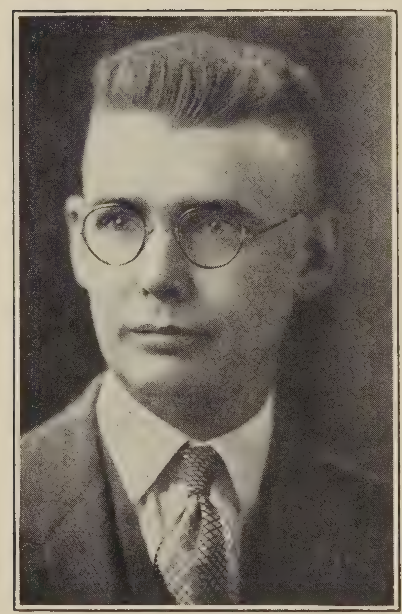
The ENAMELIST is strictly an informative trade paper. It seeks to provide a medium for the exchange of new ideas and new knowledge. The worth of these ideas and knowledge is the measure of their value to the readers. No estimate has been made of the benefit readers have received from the editorial content of the ENAMELIST, but the sincere hope of the publishers is that readers have at least been amply repaid for the time they have given to this monthly visitor.

No man can believe in the honest intentions of others who has not honest intentions himself.

In the year ahead the policy that has proved successful in the past will be continued. Criticism will be welcome at all times to the end that the porcelain enameling industry may be more effectively served.

William Feather

R. D. Cooke Changes Position



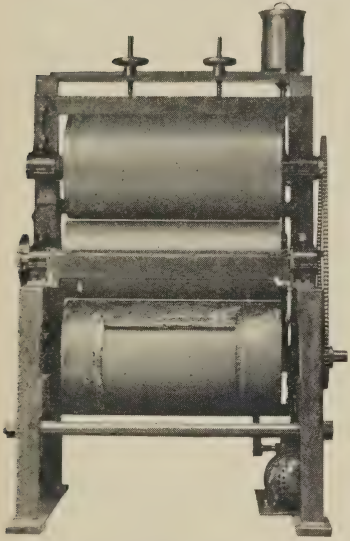
R. D. Cooke who is very well known throughout the enameling industry, is leaving the Columbian Enameling & Stamping Company, Terre Haute, Ind., on October 1st, and will become associated with Benjamin Electric Mfg. Company of Des Plaines, Ill. He will have charge of a new Research Department there, which will be distinct from their present laboratory, and independent of the Production Department.

Mr. Cooke is a graduate of the University of Wisconsin, and was for five years a fellow at the Mellon Institute. He is a prominent member of the American Ceramic Society and is the author of numerous papers on enameling, including important articles contributed to the ENAMELIST

We are sure that all of our readers will wish Mr. Cooke the greatest of success in his new work.

A chip on the shoulder is too heavy a piece of baggage to carry through life.

Graining Machines—Latest Development for Big Production of Imitation Wood Finishes in Porcelain



THE Oxford Varnish Corporation, who have been so successful in the production of graining plates and rolls, have recently put on the market, an Automatic Machine, which we are here illustrating.

In one porcelain enameling plant, they have found that three men, with this machine, could turn out as much work in an hour and a half, as five operators turned out previously in three days' time, using plates. In fact, the production possible with the machine is limited only by the speed with which work can be brought up to the machine and taken away after being grained.

The machine travels at the rate of 40 feet per minute, and as the largest stove parts are approximately 4 feet long, and figuring that the machine is only operated at 50% of its efficiency, you would get five pieces per minute, or 300 per hour.

Not only does the machine save labor, but retrieves graining ink. There is no cleaning of rolls, and graining ink that is on the transfer roll is scraped from the roll to clean it, and goes to a tank, which connects with the circulating system, pumping this ink back into the tank at the top of the machine where it is strained and again used.

Apparently the use of imitation wood finishes in porcelain is growing at a great rate, so this machine will undoubtedly be popular with the enameling trade.

* * *

H. L. Cook, formerly with Ingram-Richardson Mfg. Co., is now with the Baltimore Enameling & Novelty Co., Baltimore, Md.

Dry Motto: See America Thirst.

The Question of Annealing Porcelain Parts Proved to be Very Interesting

AS the Porcelain Enameling Industry develops more and more into a big production proposition, the Enameler comes squarely against the problem of continuous processes.

To the person not familiar with enameling problems, it seems a comparatively easy matter to develop a continuous enameling furnace, but upon going further into the subject, the difficulties begin to show themselves.

One of the good features claimed for continuous enameling furnaces is the fact, that by bringing the enameled ware slowly up to temperature for enameling, and then by cooling it in the same gradual manner, that you get an annealing feature which makes the enamel look brittle and more durable.

The Editor has discussed this problem with so many different men, that he thought it would be worth while to get a composite opinion from a representative group of both technical and practical enamelers on this subject.

Letters were sent out to a great many men, among them were such well known technical men as R. R. Danielson and Homer F. Staley, of the Metal & Thermit Corporation, Dr. R. R. Shively of The B. F. Drakenfeld Company, J. E. Hansen of the Ferro Enameling Company, H. G. Wolfram, Chief of the Enameled Metals Section of the Department of the Bureau of Standards, C. A. Blackburn of the Perfection Stove Company, C. W. Mehling of the American Radiator Company, R. D. Landrum, former President of the American Ceramic Society, R. C. Purdy, General Secretary of the American Ceramic Society, and other men who have a reputation as experts in the enameling business.

The general consensus of opinion is that the amount of annealing which you would secure in any of the continuous enameling furnaces that have been built up to this time, would not be sufficient to be of any value. Theoretically, it was pretty generally agreed that if the heating up process and the cooling down process could be prolonged over a period of three or four hours, you might get an annealing effect that would be of some value.

See that dark shadow looming up? It's that of the coal bin.

Of course, the whole question of annealing porcelain enameled parts has arisen because it is customary and necessary to anneal glass, and inasmuch as porcelain is glass applied to metal, it would ordinarily follow that you would get good results by annealing porcelain.

Ross Purdy brings out a point here that covers this situation. He says:

> "The case of the glass on iron and steel is not analogous to that of glass. In glass work they melt the batch to the consistency of soft taffy and then blow it, or press it into shape.
>
> Glass thus has flow strains, due to the fact that all portions of the mass are not forced to flow to the same extent, nor in the same direction. It is the working of the glass during forming that is responsible for the strain in the glass articles.
>
> On the other hand, the enamel on the cast iron or steel is melted in place. The Geologist would say it is formed in situ. It is not subject to strains, in its formation, which can be relieved by annealing.
>
> The ability of enamel to stand perfect on iron or steel rests entirely in the general quality of the glass to withstand all sorts of strain."

Dr. R. R. Shively brings up a very interesting point. He says:

> "Due to the fact that the porcelain is on the steel in such a thin layer and that the steel is hot when taken from the furnace, I do not believe that annealing would help the cause any, as I feel that the enamel is fairly well annealed, due to the slow cooling of the metal. You may be interested to know that in many instances where very thin beakers, etc., are made, very little, if any annealing is required."

We must keep in mind of course, that enamel, though glass, is applied in a very thin section, and does have a certain element of slow cooling due to the reason given by Dr. Shively.

A tactful chief can make a man feel as if he were getting a bag of gold when he lets him hold the bag.

> Mr. H. G. Wolfram says:
> "The steel and enamel having two different expansions, could never be effectively annealed enough to remove the strain. The glass people find that, should their glass contain striae, which is no different in chemical composition, and but slightly different in expansion, no amount of annealing will remove the strain in the porcelain containing the striae."

Mr. Danielson and Mr. Staley were inclined to believe that annealing would be helpful, but that there would be a danger if the time of annealing were extended, as a loss of gloss might be caused by subjecting the enamel parts to the high temperature for an unusual length of time.

R. D. Landrum stated that he had made experiments to see whether or not slow cooling would add to the durability of the ware, and the results of these experiments did not show any change that was measurable.

In the August issue of the Journal of the American Ceramic Society, there is a very intererting article entitled "The Annealing of Glass—a Non-technical Presentation." In this article, which can be profitably read by every enameler, the author states on page 496, that,

> "Very thin ware can with safety be cooled rapidly from the maximum temperature, but the safe cooling rate decreases very rapidly as the thickness increases."

We can safely state that glass on steel or cast iron, could be classified as very thin ware, and consequently can have this expert's assurance that it can be cooled rapidly with safety.

From these various opinions we judge that the question of annealing different parts offers no solution to our present problem, and that you can not only expect no good results from annealing, but that you can pretty safely figure on trouble either with lack of gloss or in straightening your ware if it is annealed.

We hope that this article will create enough interest, so that we will have opinions from other enamelers on this subject.

A man who pays his debts may not go far, but he can always come back.

The High Price of Tin

The most expensive and most speculative material used in large quantities by the enameling industry is tin oxide. Its cost is directly dependent upon the price of metallic tin. It is especially disturbing, therefore, that the tin market, which has been climbing steadily since the early part of June has now reached a level, (71.75c Oct. 6th), which was only exceeded for a short time during the world war and during the Embargo of 1919. High prices at those times were caused by very unusual conditions, but the high price of tin and oxide today simply reflect conditions which may be expected to continue. Either normal consumption of tin must be curtailed or production increased or high prices are certain to contine. As a matter of fact, the consumption of tin is increasing and there is no indication that anything is being done to increase the output of tin metal in the Straits settlements.

The world's visible supply has for some time been much smaller than at any time during the world war. This world's visible supply, including shipments of Banka and Chinese to the U. S. was only 15,831 long tons. June 30th this year, 13,777, July 30th, 13,352, August 30th, and 14,379, September 30th, as compared with an average of 16,596 tons from August, 1914 to November, 1918. With the settlement of the British coal strike, a further increase in consumption of tin will of course take place, further decreasing the supply. The irreducible minimum is therefore approaching. This considered with the fact that the main sources of supply are some 9000 miles from New York is indeed alarming.

The enameling industry, however, need not feel as alarmed as the metal industry for more and more Zirconium Oxide is being used as a direct substitule for tin oxide. Its raw materials occur in this country and there is no reason to believe that its price can be affected by the varying metal market or, by any conditions political or otherwise in any country other than our own.

* * *

Harry Goudy of the Porcelain Enamel & Mfg. Co. has been recently made assistant sales manager.

It is strange yet true that none of the face lifting in this country is done by the strong men.

Colored Enamels

An Elementary Analyses of Light and Color

By R. H. Williams, Sydney, Australia

TO the modern practical enameler the question of a colored enamel is quickly dealt with by ordering from the manufacturers an oxide of the exact color required, milling it with a suitable flux, thus obtaining an enamel colored to his requirements.

This was not always so. His predecessor, having no fine palette of dependable color oxides to choose from, was forced to give serious thought to color before adding his metallic oxides to the smelting batch, and so, per medium of the smelting crucible, obtaining a more or less correct color result.

His range of colors was limited, and in order to obtain anything worthy he had to pay great attention to the principles of color-harmony founded on the researches of great artists and others, blending and combining his enamels so that the results were more in accordance with the rules of Art.

Much of this patient study and experimenting is taken from the shoulders of the modern enameler, being borne by those manufacturers who, through specializing in vitrifiable colors, have produced the most perfect palette that has ever been placed before the world of ceramics

Yet with all these colors ready at our command, many an enameler of today would do well to acquire a knowledge of color harmony, the simple, elementary rules of which will now be set forth.

As light is the source of color it is necessary to start with an examination of its composition as the lines of contrast of colors are entirely dependent upon it.

When a ray of sunshine, or white light as it is termed, passes through a glass prism it is decomposed or separated, and if the image formed, called the prismatic spectrum is received upon a white screen placed at a suitable distance from the prism, it will be found to consist of various colors arranged in a certain order, like those of the rainbow. These colors are six in number, three of which are simple and three compound resulting from the mixture of the simple colors in pairs.

Curious, but a bull's eye can be scored on a bear target.

This prismatic spectrum forms the basis of the theory of color and harmony as evolved by M. Chevreul, Sir David Brewster and others.

Blue, Red and Yellow are simple or primary colors.

Green, Violet and Orange are compound or secondary colors.

Blue and Red produces Violet.

Red and Yellow produces Orange.

Yellow and Blue produces Green.

These compound colors vary in hue according to the proportions of simple colors of which they are formed.

Thus by increasing the quantity of Blue in the mixture of Blue and Red we produce Purple, Indigo, etc. The same effect takes place with greens.

The primary colors are simple and pure, they cannot like the secondaries, be produced by the mixture of other colors.

It is evident that the color of the primaries cannot vary as color (or in hue) but only in intensity, at least so long as they are kept pure, but the hues of the secondaries may vary infinitely according as one or the other predominates.

As white light is composed of three colors, Blue, Red and Yellow, the color that is missing from the compound is called the complimentary color, thus:

Blue is the complimentary of Orange (Red and Yellow).

Red is the complimentary of Green (Blue and Yellow).

Yellow is the complimentary of Violet (Blue and Red).

By this it will be seen that the complimentary of a primary color is the secondary composed of the other two primaries and vice-versa—thus:

Orange (Red and Yellow) is complimentary to Blue.

Green (Blue and Yellow) is complimentary to Red.

Violet (Blue and Red) is complimentary to Yellow.

If Blue is tinged with Red, its complimentary Orange will be yellower.

If Red is tinged with Blue its complimentary Green will be yellower.

If Red is tinged with Yellow its complimentary Green will be bluer.

If Yellow is tinged with Red its complimentary Violet will be bluer.

It's a tough boss that fires the train dispatcher for watching the clock.

If Yellow is tinged with Blue its complimentary Violet will be redder.

A given color, red for instance, may experience many modifications so as to appear very different from what it really is according to the circumstances under which it is used. It may be modified in its color:

1st—By being placed in contact with Blue, Red appears yellower.

2nd—By being placed in contact with Green, Red appears brighter.

3rd—By being placed in contact with Black, Red appears duller.

4th—By being placed in contact with Yellow, Red appears bluer.

5th—By being placed in contact with White, Red appears lighter.

6th—By being placed in contact with Gray, Red appears brighter.

Thus the same red may appear very different according to the circumstances under which it is used. It may also be modified in its intensity or tone. Thus, if a dark color be placed beside a different but lighter color, the dark color appears deeper and the light color appears lighter. This is the result of contrast of tone. A color is also greatly modified by gloss as is shown by the plumage of birds, the wings of butterflies and by certain flowers. The colors of objects are also greatly modified by the form of the objects, which may produce variations of light and shade and thus exhibit many tones of the same color. Both the tone and the hue of a colored object are modified by the quality of light by which it is illumined, whether it be direct sunlight, diffused daylight, or diffused reflective light.

If we look at two strips of the same color but of different tones or at two strips of different colors taken at the same time and placed side-by-side, providing the strips be not too wide the eye perceives certain modifications affecting both the quality and intensity of the color, and they will appear very different from what they do when viewed separately.

A Chrysanthemum is a dandelion with a college education.

First the tone of each strip will appear changed, the light tone will appear lighter, and the deep tone deeper commencing at the line of contact where it will be greater and gradually diminishing as it recedes from it. This is the contrast of tone.

Secondly the color of the different strips will appear changed each appearing as differently as possible from the other. This is contrast of color.

The contiguous colors are modified in hue as if the complimentary of the neighboring color was added to each. These modifications taken together constitute simultaneous contrast of color which may be expressed in the following terms: Whenever the eye sees at the same time too contiguous colors they will appear as dissimilar as possible, both in their hue and in their tone. Thus if the strips be Blue and Yellow the complimentary of blue, which is orange, is added to the yellow making it appear redder and more brilliant, while violet the complimentary of yellow, is added to the blue making the latter appear indigo, the color added to each being Red, the primary, absent from the view of the contiguous strips.

If the strips be secondary colors as Orange and Green, the complimentary of orange, which is blue, is added to the green making it appear bluer, and red, the complimentary of green is added to the orange making it appear redder, or, what is the same thing, yellow, the absent complimentary color is subtracted from each contiguous color thus:

The complimentary of Orange is Blue.
The complimentary of Green is Red.
The absent complimentary is Yellow.

* * *

A well known stamping company in the East writes us as follows:

"We are in need of a man for our Enameling Dept., not necessarily a chemist, but some one who has had practical experience in the mixing of enamels and in the supervising of dipping, burning, etc. We have our own formulas and the necessary facilities for proper supervision of this work, but are desirous of starting in some one who naturally can take over the management of this department."

If any of our readers are interested in having further information in regard to this position, please write the ENAMELIST PUBLISHING COMPANY.

In these days of automobile accidents it is all one can do to keep body and chassis together.

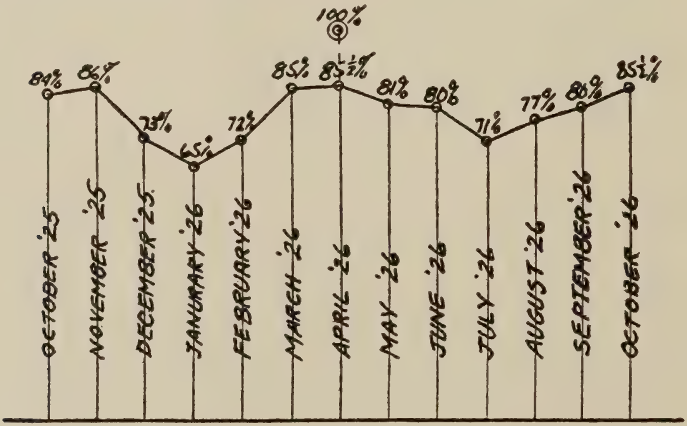
BELOW is an accurate record of the year's activities in the enameling industry. From month to month we have kept a record of the percentage of enameling furnaces operating. The average for the year is 78%—not far from 80%—which is a mighty good record. Only during December, January, February, and July and August, did we actually go below 80%, due to the enameling business being a seasonal business.

October 1926 is higher than October 1925. The peak which will be reached in November will be higher than in 1925, as we are entering November under a strong impetus. The average for next year should be greater than this year, due to the greater uses of porcelain which have been developed.

General business, during the last couple of months, has come out of the doldrums, and a period of comparative prosperity is promised us for the rest of this year. Mr. C. L. Bradley's report in Trade Winds, as follows, is most encouraging:

Employment is good, wages are high; government crop reports are most encouraging with but few spotty sections; basic industries are extremely active; railroad earnings are at peak and even the tire trade and textiles are obviously entering upon a period of renewed activity."

During next year we hope to give you more and valuable records of the enameling industry.

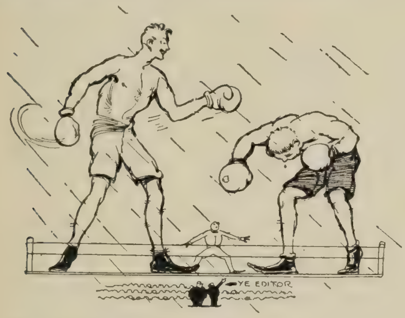


If you want to loaf on the job be your own paymaster.

Sporting Editor Covers Big Fight For Enamelist

SESQUI STADIUM, PHILADELPHIA, PA.,

Knowing that the enameling industry depended on the Enamelist for authentic information in every line, we sent our Editor, at great expense (including bets lost) to the big fight.



"Dempsey was walking around the ring all bent over."

Frankly, the Editor had never seen a prize fight before, but having a lot of married friends, knew the general principles of the so called manly art of self-defense. He was surprised to see three men in the fight and, naturally, was rooting for the little fellow in the white linen suit. The two big fellows never seemed to be able to hit him, but every now and then, he would rush right between the big fellows and give them each a big shove. After yelling for him for the first three rounds, our sporting editor discovered he was the referee.

Think of it—two million dollars for tickets, 130,000 people (more than all the stove companies and enameling plants together employ). From a political standpoint, the whole crowd was wet—inside and out. During the championship bout, it poured steadily for the whole ten rounds but not a soul left for cover—in fact, one fellow, who was too wet, was still sleeping quietly an hour after the stadium had emptied. When the attendants woke him, he inquired, "When does the big fight start?" Think of it, $27.50 to sleep in the rain.

There were a lot of distinguished people there, besides your Editor. The three Roosevelt boys, eight Governors, Ed. Colquhoun of Middletown, Clarence Graham of Newark, California, hundreds of millionaires, many actors, both good and bad, made up the biggest crowd which had ever witnessed a box fight.

Talk is cheap—until you get the telephone bill.

Getting back to the fight, we were surprised to see Dempsey walking around the ring all bent over, like he was looking for something. I asked a fat stranger next to me what Dempsey was looking for and he surprised me by saying "The big stiff is looking for a sock and he'll get it pretty soon, too." This was surprising because neither Dempsey nor Tunney wore socks.

"The next time I'll have an umbrella and a periscope"

Tunney had a big advantage because he was a Marine, and the waves got pretty high before the fight was over. At my next fight, I'm going to carry an umbrella with a periscope on it, because my ringside seat (about as far from the ring as Belleville is from St. Louis) was directly behind nine derby hats and twelve fellows who were trying to raise pompadours. I don't know much about fighting but I'll bet Emil Lueppke can lick Dempsey in less than ten rounds.

* * *

The companies of the Burr, Patterson Co., Detroit, and the D. L. Auld Co., Columbus, Ohio, have merged, and will be known as the Burr, Patterson & Auld Company. They manufacture enameled jewelry, particularly fraternity jewelry.

* * *

POSITION WANTED—Enameler with many years of experience is open for position as foreman or superintendent in sheet steel or cast iron enameling plant. Good references. Write ENAMELIST PUBLISHING CO., Box "B"

* * *

A stock dividend of 10 per cent on the common stock has been declared by the Crane Co., Chicago, Ill. This is on stock payable October 15 to stock of record September 15. The firm also declared a regular quarterly-dividends of 37½ per cent on the $25 par value common stock and 1¾ per cent on the preferred.

Selfishness kills friendship.

Hopkins Williams

MANY an interesting story, many a romance of business is never told in book or magazine, but quietly unfolded on a Pullman trip. That's the one redeeming feature of Mr. Pullman's well known invention — there's always the chance you will have an interesting fellow traveler.

On a recent trip West, I fortunately ran across my friend Hopkins Williams. During the evening he told me the most interesting story I had heard in years. It was a true story of his early experiences in the foundry, stove and enamel business.

Hopkins Williams

He had learned the foundry business in Wales, where he had also developed the Welshman's traditional love for music by singing in one of their fine choruses and also playing in the band. His home was near the estate of Madam Patti, where his chorus sang at the time of her second marriage.

When Mr. Williams came to this country he turned at once to his trade as molder. At that time he had very distinguished company in the foundry in the persons of John Penton and Peter Witt. John Penton was later the founder of the Penton Publishing Company, publishers of Foundry, Iron Trade Review and other trade papers. Peter Witt for years had been a leader in Cleveland politics and the various national Progressive Parties.

One day a group of molders decided that they wouldn't work on a certain holiday, although all the other shops were working as usual. At noon, a hurried meeting was held and the molders voted not to work. Later in the afternoon, Mr. Williams and a group of the more conservative men called another meeting and reversed the noonday action. For this they were called before the next general meeting, which was attended by Jos. Valentine, then Vice President, now President of the Molders Union. He sought to settle the dispute quickly by having a vote of censure passed on the insurrectionists.

Mr. Williams had too much spirit to stand for this, so jumped on the platform, for the first time in his life and asked the assemblage for justice, pointing out that they were censuring him for working on the holiday when almost every man in the room had worked on the same day. The crowd upheld him and the vote of censure was lost. Soon after he was surprised to find that they were talking of electing him President of the local union. He was beaten by one vote by Peter Witt, who resigned soon after and Mr. Williams was elected to succeed him. During his administration he had the Saturday half holiday idea started, which was one of the first times it was tried in this country, and it has now become a general thing.

In the panic of '93, jobs were scarce, so Mr. Williams tried his hand at selling. After a number of interesting experiences he started to work as salesman for the Cleveland Stamping & Tool Company, managed then by F. W. Judd.

At that time the company was making the "Never-break" kettle, but found that vegetables turned black when cooked in their kettle. The only thing to do was to enamel them. Vollrath was making blue and gray cast iron ware. L. & G. were making agate ware, and the St. Louis Stamping Company was making a granite ware. Cribben & Sexton were also making a cast ware, which was dark (probably ground coat on the outside and gray on the inside). Mr. Williams' company was making Massillon kettles, and apparently this was almost the beginning of the white ware industry. The Majestic Range people were giving away a set, consisting of two kettles, two spiders and a griddle, which built up a demand in the hardware stores for these utensils. This demand Mr. Williams tried to fill. Before this, the Wrought Iron Range Co. were giving one of these sets with

Honking your horn doesn't help so much as steering wisely.

each "Home Comfort Range". It is interesting to note that the Wrought Iron Range Company now have one of the finest enameling plants in the business.

He stated that in the light ware, his recollection is that the wash basin was the first to be enameled by this company. This being called Lava ware. Then came the preserving kettle and later the tea kettle, and the full line we have today.

It was a most interesting story—his life a most interesting life. I wish we had more men in America like Mr. Williams, although without the benefit of the so-called college education, he comes pretty close to being the best educated man I know. Reading and travel, plus a desire to know, made a fine substitute for college.

Mr. Williams added that he might make mention of the fact that the old Cleveland Stamping & Tool Company enameled the sheets for what he believed was the first steel enameled range made in America. These sheets were for the Tinnerman Steel Range Company. And that they also enameled what they believe to be the first linings for porcelain enameled refrigerators, the linings having been made for the Leonard Refrigerator Company of Grand Rapids, Mich. For some years now the Leonard people have had a fine large enameling plant of their own under the management of John Bardusch.

* * *

Just as we go to press, we receive a wire from **E. O.** ("Mac") McFadon of St. Louis, announcing his marriage. Congratulations!

* * *

The many friends of Robert Heuck, formerly President of the Cincinnati Enameling Company, will be very interested to know that he has won the nomination for County Recorder, and is now making a great fight for election to that position.

We sincerely hope that any readers of our magazine, who vote in Cincinnati, will do all they can to have Bob Heuck elected, because he certainly is a man of character and ability. We are not able to report whether he is running on a wet or dry platform, but will try to get a statement from him on this subject, to use in our December issue.

The live wire which counts is the one which does its work by carrying the current to run the machinery.

Merger St. Louis Range and Furnace Company Approved

CONSOLIDATION of the Bridge & Beach Manufacturing Company and the Buck's Stove and Range Company, which was effected through the Mercantile Trust Company, was recently approved at meetings of the directors of both companies. The combined companies will be known as the St. Louis Range and Furnace Company.

The companies affected are two of the oldest in their lines in the United States and have done much to bring St. Louis to the present position it occupies—the largest stove, range and furnace market in the world. The Bridge & Beach Company was established in St. Louis in 1837 by Hudson E. Bridge, Sr., and the Buck's Stove and Range Company was organized in 1846 by Charles Buck, and Wiley Wright. When the first stove and range factory was established west of the Mississippi, St. Louis was a town of 10,000 inhabitants, and there were no railroads within hundreds of miles. The vision of the pioneers has been more than fulfilled. St. Louis made stoves are sold in every state in the Union and in many foreign countries.

Eleven thousand shares of preferred and 20,000 shares of common stock will be issued as capitalization of the new company, and this will be exclusive of real estate and plant of the Bridge & Beach Company, which will be owned by a separate corporation. Lee W. Van Cleave, president of the Buck's Stove and Range Company since 1915, will be president of the combined companies, and L. H. Booch, president of the Bridge & Beach Company, will be vice president.

Other officers will be: Jones T. Templeton, former vice president of Buck's, vice president; G. L. Bridge, former vice president of Bridge & Beach, vice president; Maurice A. Murray, former treasurer of Buck's, treasurer; Louis H. Riecke, former secretary of Bridge & Beach, secretary.

It was announced that employes of neither company will be affected by the merger, nor will any of the present customers of either company be disturbed, as both the Buck's and Bridge & Beach lines, well known to the trade for many years, will continue to be manufactured and will be sold through separate divisions.

Hard times are made harder by soft tastes.

Enameling Bathroom Fixtures

THE Autoyre Company of Oakville, Connecticut recently installed one of the most interesting enamel plants in the country.

Situated in Oakville, a suburb of Waterbury, this Company for years has manufactured articles made from wire and sheet metal entirely by automatic processes. The location of The Autoyre Company in the heart of the brass industry of the world and the splendid automatic equipment, makes it possible to turn out in very large quantities brass and steel novelties, and all kinds of articles manufactured from wire and sheet metal at a very low cost. They also make a complete line of Bathroom Fixtures in both nickel and white finish.

Not satisfied with limiting themselves to the above activities alone, the officials of the Company have turned their energies and experience to making the highest class of Bathroom Fixtures. The result is the MAID-EN-WHITE Porcelain Bathroom Fixtures. They are financially interested in a foundry and are in position to quote on Porcelain Enamel Castings complete from customers' patterns or on the enameling only.

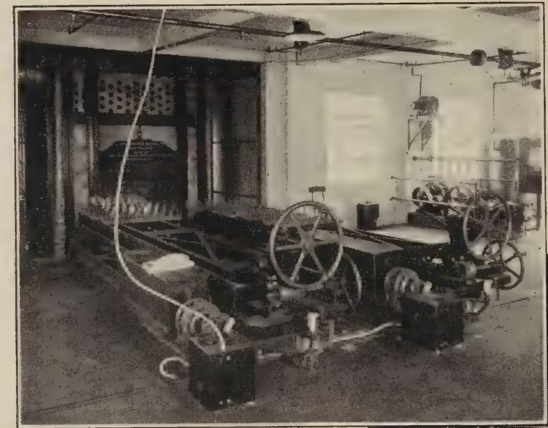
The enamel plant, a complete unit in itself, has for several months been working to capacity. The equipment is the most up-to-date in the country, and the plant which includes mills, spray booths, dryer, compressor, sand blast barrel, double fork and furnace, is installed in a building 70' x 40'. The furnace is located outside of the building. The accompanying photographs give some idea of this installation.

The problem of enameling these fixtures has been carefully worked out in the laboratory and we see a great future for the MAID-EN-WHITE Porcelain Bathroom Fixtures.

* * *

The Hercules Corp., Evansville, Ind., has placed contract with The Ferro Enamel Supply Co., Cleveland, Ohio, for a complete porcelain enameling department. Equipment will be modern and efficient in every way, and the department will be devoted to the production of porcelai enameled refrigerator linings for the Servel Co., of New York, manufacturers of Servel "Ice by Wire" refrig rators.

Blame is safer than praise.



Every cosmetic dealer knows that a woman's face is his fortune.

Rosiclare Fluorspar

Enamelers Ground Fluorspar

Carloads—Less than carloads
Packed in bags or barrels

Analysis of composite sample of actual shipments of Rosiclare No. 1 Ground Fluorspar—January 1st to September 1st, 1926:

Calcium Fluoride	CaF_2	97.86
Silica	$Si0_2$	0.72
Ferric Oxide	Fe_20_3	0.06
Alumina	$A1_20_3$	0.08
Calcium Carbonate	$CaCo_3$	1.01
Magnesium Carbonate	$MgC0_3$	0.26
Lead	Pb	None
Zinc	Zn	None
Barium	Ba	None
Sulphur	S	Trace
		99.99

COLOR—Pure White

Write us about your requirements

OGLEBAY, NORTON & CO., Agt.

Operating and Sales Agents for
Rosiclare Lead & Fluorspar Mining Co.
HANNA BUILDING, CLEVELAND, OHIO

REG. U.S. PAT. OFF.

R&H

A1

CERAMIC CHEMICALS
MINERALS, OXIDES
and
SERVICE

are faithful aids
to satisfactory
results

*"America's Leading
Ceramic Material House"*

R & H has built up a complete, well-rounded service to enamelware manufacturers.

Your requirements are met by materials of trustworthy dependability. Purity and efficiency, being essentials to good production, are our first considerations.

Service is viewed from two angles. Deliveries, and the details necessary to your satisfaction, are carefully attended to. Co-operation in solving the questions that arise in production processes is gladly extended by *R & H* Technical Service.

The
ROESSLER & HASSLACHER CHEMICAL CO.
709 SIXTH AVENUE, NEW YORK

Chicago
Boston
New Orleans
Cleveland
Trenton
Pittsburgh
Baltimore
San Francisco
Philadelphia
Kansas City

"America's Leading
Ceramic Material House"

Making of Vitreous Enameling Sheets

WHAT'S beneath those sanitary, gleaming-white refrigerator linnigs—and where and how is it made? Sheet metal, to be sure. And as for where and how it is made, let us step into the plants of the American Rolling Mill Company, at Middletown, Ohio, one of the larger iron and steel companies that specializes in the making of high-grade sheets for porcelain enameling purposes.

Upon entering the open hearth furnace department we see the pig iron from the blast furnace, together with limestone and selected scrap, being reduced to a molten state.

Here is where the iron receives its final purification. And upon this purification, which includes, and even emphasizes "degasification," depends in large measure the success of the sheet metal for vitreous enameling uses. For in the open hearth there must be virtual elimination of the harmful gases, else the enameled surface of the product will contain blisters and pinholes.

The usual capacity of the ordinary open hearth furnace is about seventy-five tons. That is, it will yield seventy-five tons of iron or steel in every heat However, there are many plants equipped with the larger furnaces of one hundred tons capacity.

If steel is being made the purification process takes from ten to twelve hours, but an extremely pure iron, such as ARMCO Ingot Iron, requires a much longer time.

After many chemical tests for "purity," the heat is ready for tapping. This is the most spectacular part of the entire manufacturing process. Molten metal, seething and boiling at a temperature of 3000 degrees Fahrenheit is a rare sight and one that is never forgotten.

A huge crane picks up the "ladle" that has been filled with the molten metal and carries it over to the train of "ingot molds" where the metal is "teemed" into molds. (*See illustration*)

A heat usually will fill a train of 35 to 45 ingot molds. These go to the "stripping yard" where the molds are removed, leaving oblong ingots weighing about 5,000 lbs.

The ingots must now be prepared for rolling into blooms, billets, slabs, and sheet bars, so are brought to a uniform heat

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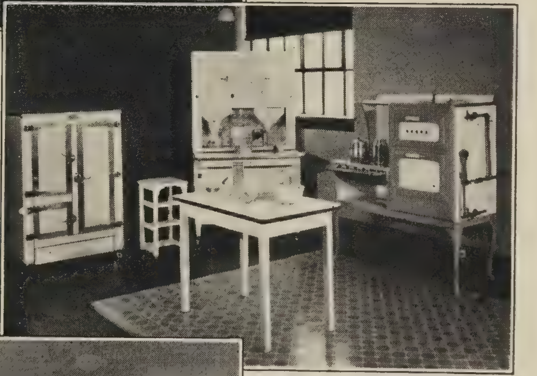
Hush money some times talks.



A Professor of Agriculture should know his oats.

in soaking pits. They are then taken out and carried by a large crane to the blooming mill, which has been aptly compared to a gigantic clothes wringer. (*See illustration*)

After a number of passes, backward and forward, the ingot is reduced to the proper size and shape bloom, billet or slab. Finally the rolling is done and a roll table conveyor takes the metal to the blooming mill shears.

A skilled inspector cuts away the porous and spongy metal, leaving only sound metal, free from all imperfections, which goes in turn to the bar mill.

Back and forth through the rolls the blooms and billets pass, becoming gradually thinner, till at last they emerge as long ribbons of iron or steel bars. The bar is pushed from the roller-table to the cooling-bed where it is "gaged" again, for only prime bars are allowed to go to the sheet mill.

This inspection over, the bars are cut into the length required for the particular width sheet desired.

The bars are first "roughed down" on the soft or roughing rolls to a thickness that will conveniently enter the finishing rolls. Two bars are worked at a time, but are passed through the rolls separately. When the desired thickness has been secured, the bars are transferred to the finishing rolls.

After the sheets have been reheated to a rolling temperature, they are again put through the finishing rolls. This rolling is continued until the pack reaches the proper length, plus an allowance for uneven edges. Then it goes to the shears to be trimmed to size.

Now comes the annealing or heat treating to make the sheet soft and workable.

The sheets are stacked on annealing pans, a large cover placed over them, and the bottoms carefully sanded to exclude air. The annealing box is then placed in a large oven and sealed in for a long rest under a uniform heat temperature.

But sheet metal for enameling purposes must be absolutely clean. So the last step is the "pickling" process.

And now these sheets will be formed, welded and assembled into refrigerator linings and parts with those lustrous porcelain enameled finishes, which are the delight of housekeepers the world over, and the task of the sheet iron maker is ended.

Figures may never lie, but they do change with age.

Established
1878

Established
1878

Attention!
Stove Manufacturers

At Your Service

**Oven Thermometer
Requirements
for
*1927***

HERE'S WHAT WE HAVE TO OFFER:

*Rust Proof Sash Ring
High Temperature Thermostatic Metal
Greater Accuracy*

*Thermometers Calibrated to Your Oven
Life of Oven Guarantee*

*Thermostatic Movement Not Effected
By Overheating*

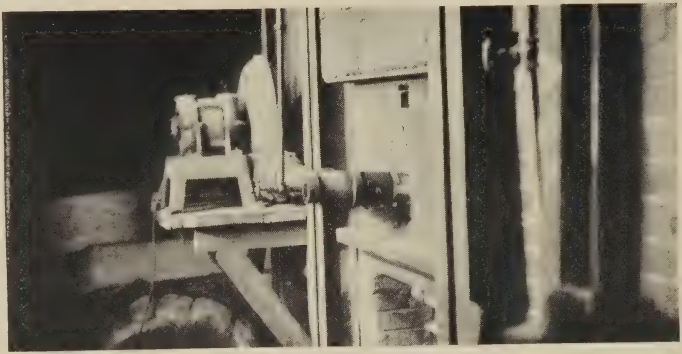
High Quality Plus Reasonable Price.

Write for further information to

Cooper Oven Thermometer Co.
Pequabuck, Conn.

Also Porcelain Enamel Name Plates, Dials and other small parts

Reliability

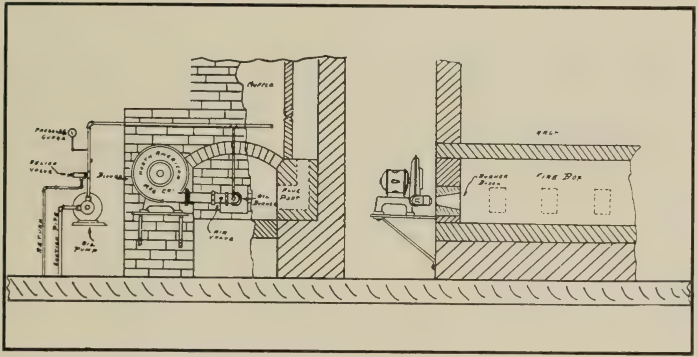


North American Oil Burning Equipment

in a good furnace is hard to beat, for steady production of enameled ware at low cost. The proper burning equipment is of extreme importance. Write us for a list of our installations, prices and other information.

The North American Mfg. Company
8918 Frederick Avenue
Cleveland, Ohio

Performance



North American Oil Burning Equipment

is standard in the enameling industry. It is easy to install, operates on low pressure, burns a heavier oil, without clogging and smoking, and thoroughly mixes the fuel with air, cutting the fuel consumption.

The North American Mfg. Company
8918 Frederick Avenue
Cleveland, Ohio

A Friendly Visit Through Carl Mehling's Plant

UPON visiting the new enamel plant of the American Radiator Co., 2000 Elmwood Ave., Buffalo, N. Y., we were received with open arms by Mr. Carl Mehling, the very affable and capable Manager of this wonderful new plant.

The personnel at American Radiator Enameling Plant. Left to right—McDermott, Murphy, Crow, Pike, Bond, Baldwin, Holm, Schwendler and Carl Mehling.

Mr. Mehling has long been prominent in the enameling business and his 30 years' of experience cover a broad field both in this country and abroad. In the work of enameling jackets for Vecto heaters and other products of the American Radiator Co., he has surrounded himself with a very efficient personnel headed by Mr. R. H. Schwendler, who is the Superintendent.

Mr. Schwendler is a very substantial young man who was initiated into the enameling business a few years ago by Mr. Mehling after he completed the layout and design of the original plant of which he became Superintendent. and which is now

There is no wisdom like frankness.

IN the production of stoves, either coal, oil, gas or electric, whether you will have them porcelain enameled or japan enameled

BRUKO

for cleaning sheets and parts before pickling gives better finish and saves you many dollars.

Bruce Products Corporation

Detroit, Mich.

Chicago Cleveland Windsor, Canada

We must beat the iron while it is hot; we may polish it at leisure.

known as the cast iron plant. Mr. Schwendler was well equipped to do this work as he is a mechanical and electrical engineer with about 10 years' experience. He now has direct supervision of the steel and cast iron shop.

The mixing and smelting departments of this plant come under the direction of Mr. Walter Bond. Mr. Bond has had seven years' experience in this line of work and was formerly associated with Mr. Mehling for about four years previous to coming to the American Radiator Company and under his guidance has developed himself into a very valuable asset to the company. The work done in this department is of course very important being the first step in the enameling process.

As chemistry plays an important role in the making of the different kinds and colors of enamel, Mr. Mehling has secured the services of Mr. Wm. Baldwin who is a graduate chemist of the University of Buffalo. Mr. Baldwin is kept busy in his new laboratory, which is fully equipped to analyze and test all raw materials and make up new enamel samples.

The new enamel shop proper employs about 100 workers and the fine results obtained by these people is due in a large measure to the general character of the building itself and the wonderful working conditions, from the standpoint of health and safety for all employees, which again reflects greatly to the foresight and ideas of Mr. Mehling.

The steady production of first class finished enamel ware is largely the result of the watchful supervision of Mr. Hans Holm who is head foreman. Mr. Holm who is a native of Germany and a construction engineer, first became connected with the American Radiator Co. about three years ago when he was associated with Mr. Schwendler in the layout of the first enamel shop and like the latter he has grown with the business and is now well qualified to fill the important position he has. Mr. Holm's engineering knowledge is a great asset in the exercise of his foremanship duties which include maintenance and repair.

The packing, shipping and receiving ends of this plant are followed closely by Mr. Jas. McDermott whose very able assistance adds greatly to the smooth running of the entire plant. Mr. McDermott has been with the company for six years and

The years teach much which the days never know.

Controlling Profits in the Enameling Plant

Weighing in at the receiving dock, and weighing out the enameled castings in the shipping department—between these two weighings lie your profits.

As control operations they should be done with utmost accuracy.

As production operations they must be done with all possible speed.

Toledo Automatic Dial Scales provide accuracy, stop losses, and save time in operations such as these, as well as in mixing, compounding and checking. A survey by a Toledo man will cost you nothing. It may save you much. Write for particulars.

Toledo Scale Company
Toledo, Ohio

Canadian Toledo Scale Co., Limited
Windsor, Ontario

Manufacturers of Automatic Scales for Every Purpose

Service Stations in 106 Cities in the United States and Canada

TOLEDO SCALES

NO SPRINGS HONEST WEIGHT

for the past three years his services have been rendered very efficiently in various capacities, including that of chief inspector. He was formerly associated with an allied industry for 16 years and this experience is a great help in his present job.

The cast iron department is always busy due to the increased production of enameled steel in the new plant and here we find in charge Mr. Geo. Crowe who has handled the men to perfection ever since the plant's inception. The cast iron is burned in electric furnaces but of a different type than the continuous rotary furnaces that burn the steel ware. However, Mr. Crowe obtains wonderful results and can easily show a daily production of from 15 to 20 tons of enameled cast iron.

Any new improvements or changes such as the new Sand Blast Bldg. are developed in the drafting room and brought to a successful completion by Mr. M. J. Murphy and Mr. R. F. Pike, who, under the supervision of Mr. Mehling and Mr. Schwendler made all the layouts and drawings that went to make up this super-enamel plant. Mr. Murphy has had over twelve years' experience in the designing and engineering field and Mr. Pike's services began with the layout of the old shop and he is now acting as inspector of construction for the new Sand Blast Bldg.

In conclusion we wish to state that the American Radiator Co. is constantly on the alert to keep ahead of the game in the matter of modern production methods and this fact is exemplified by their new plant and the unique new sand blast building which they are now erecting.

* * *

W. R. Emig, in charge of enameling at the Toledo Scale Co., wires us: "Congratu'ations on your Third Anniversary. Best Wishes for future success."

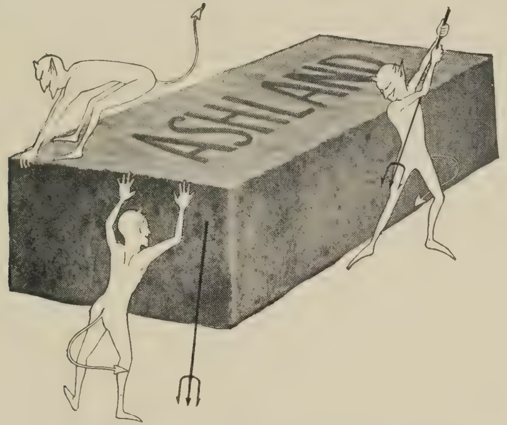
* * *

The Central Stamping Co., of Massillon, Ohio has consolidated with the United Alloy Steel Co. of Canton. The new company will be known as the Central Alloy Steel Corporation.

* * *

An interesting bulletin was recently issued by F. J. Ryan & Co., Philadelphia, on "Automatic Combustion and Temperature Control." If any of our readers would be interested, suggest you write the Ryan Company for a free copy of this bulletin.

In skating over thin ice our safety is in our speed.



Without Bias

As manufacturers of flint, semi-flint, plastic and diaspore fire brick we can supply the exact type that best meets your own individual requirements.

Take advantage of that service. It will result in longer life and greater freedom from repair expense or loss of production time.

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND, KENTUCKY.

Sales and Service Offices

New York
Cleveland
Chicago
Indianapolis
Detroit
Havana, Cuba

The wages of war is debt.

Book Ramblings

Those of our readers who depend on the Enamelist for their mental as well as their financial uplift, will be glad to know that our book reviewer has been working overtime.

First, we want to recommend "Beau Sabreur" by Percival Wren. This is a story of the French Legion in Northern Africa and is a sequel to "Beau Geste."

Another good book, based on the travelling shows which used to travel up and down the Mississippi and Ohio, is the "Show Boat" by Edna Ferber, author of "So Big." If your tastes require information as well as entertainment, be sure to buy "The Story of Philosophy" by Will Durant. It gives you the story and ideas of all the philosophers from Socrates, Plato and Aristotle down to modern times.

If you like historical novels, read the "Exquisite Perdita," another book by E. Barrington, who wrote "The Glorious Apollo," "The Divine Lady," etc. The long winter nights will soon be here, so get busy and order a few books, light your wood fire in the grate, put on your oldest slippers and go to it.

* * *

The Brown Instrument Co. has developed, after several years of effort, an electric Flow Meter, operating on an entirely new principle. Complete information can be obtained, without obligation, by writing the Brown Instrument Co., at Philadelphia, Pa.

* * *

C. H. Matson, who is in charge of enameling at the General Electric Co., Fort Wayne, Ind., writes us: "I wish to congratulate the ENAMELIST upon its Third Anniversary. It has made a positive forward movement during the past three years, until it is now making a real contribution to the industry."

* * *

Sale of the Penninsular Stove company's factory site at West Fort street and Trumbull avenue, Detroit, Mich., to the Michigan Central railroad was approved recently at a meeting of the stockholders of the stove company.

The price paid for the property was not announced, but is estimated to be worth between $4,000,000 and $5,000,000.

What is needed to day may be useless tomorrow.

Continuous Production

OUR readers will note on pages 42 and 43 a print showing two of the most modern enamel plant layouts. For years those interested in porcelain enameling, have hoped for the day when continuous enameling would be possible.

We believe that the experience enjoyed by the companies using the systems illustrated here, proves that the day of continuous enameling has arrived.

It is true that you can't pour the enamel into one end of the machine and have a finished refrigerator or stove, fully enameled, come out at the other end of the machine, but as far as practical purposes go, we have arrived at the day of successful continuous porcelain enameling.

The two systems illustrated here are the same in principle and differ only in the design of furnaces, conveyors and dryers.

The first system is used in the enameling of refrigerator linings, doors, etc., but can be used for enameling of steel parts. After the ware has been pickled, it is taken into the Monel baskets by an overhead trolley to the dipping department, where the work is dipped and then laid, not on boards which are carted around the shop with trucks, but either laid directly on a circular conveyor, or laid on boards which are carried by this conveyor. Conveyor carries the work to a dryer which is heated by waste heat, taken from the furnace, and then around to the fork where the work is lifted from the conveyor and laid directly on the fork. The fork consists of a loading table, and unloading table, and the fork proper, which projects the work into the furnace. The work is lifted from the conveyor, after having been dried, directly to the loading table, transferred from this to the fork, which projects into the furnace, where, after being enameled is withdrawn in the usual manner and lifted from the fork by the unloading table. The work is herein straightened and inspected and lifted again to another circular conveyor, which takes it back to the spraying department, or dipping department, depending upon which process is used for the first white. After the first white has been applied, the work is put back on the second cir cular conveyor, which takes it to a dryer and to the loading table for the second furnace. The work again goes from the loading table to

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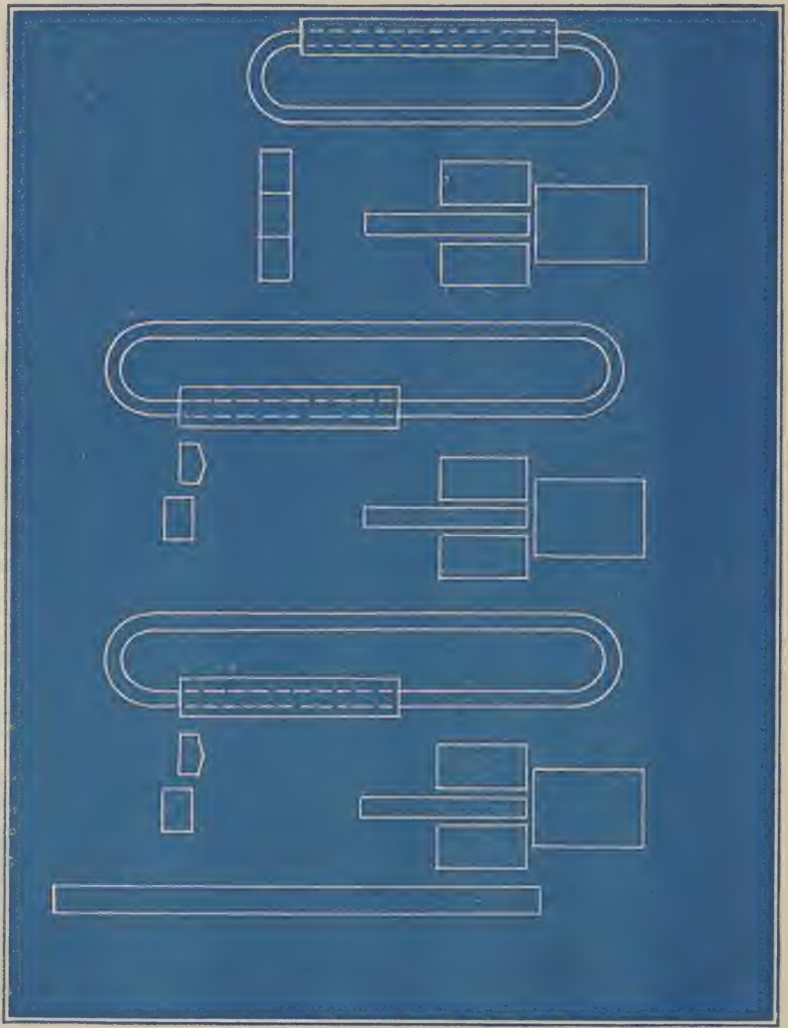
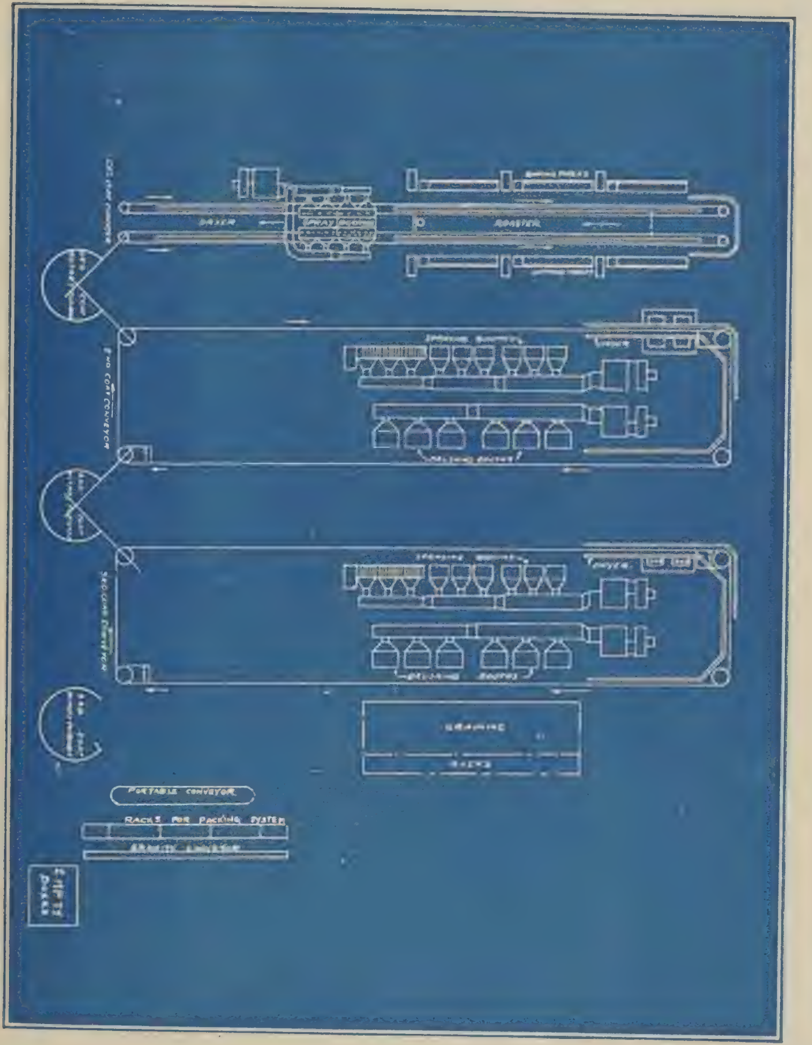
It is never too late to start over again.




1ST COAT CONVEYOR
DRYER
ROASTER
SPRAYING BOOTHS
2ND COAT CONVEYOR
SPRAYING BOOTHS
3RD COAT CONVEYOR
DRAINING
RACKS
PORTABLE CONVEYOR
RACKS FOR PACKING SYSTEM
GRAVITY CONVEYOR
EMPTY RACKS

the fork, into the furnace, out again and to the unloading table, where it is inspected and put on the third circular conveyor, which takes it back to the spraying or dipping department. The process is again repeated and the work put back on to this third circular conveyor, which takes it to a dryer and to the third furnace, which is the last work done on the parts.

With this system any piece dipped in ground coat can be completely enameled in approximately 3 hours' time. Compare this with the old system where work was carted about the shop, shunted into various corners where oftentimes it stayed for days and sometimes weeks, occasionally months.

Due to the rapid progression of work from one furnace to another, most of the trouble in enameling is eliminated.

The first company to use this system has had the most successful experience in operating its shop, of any company we have ever observed, and this in spite of the fact that it is not yet one year old. They get greater production, better work, and a lower rate of scrap than any other plant have ever constructed.

The other system illustrated on page 43, is used for enameling flat pieces, and is built on the same general principle as the first. After leaving the pickle room the work is dipped, and then placed on a conveyor which travels the length of the room, going through a dryer on its way to the furnace. The work is taken from this conveyor at the furnace, and hung on hooks, which carry it through the circular furnace, which incidentally is heated by electricity. After the work goes through this furnace, it is removed and hung on a second conveyor, which takes it back to the spraying department, where it is taken from the conveyor, sprayed and hung back on before going through a dryer. This same conveyor carries it to the second furnace, where the first white is applied, and the work continues through the shop in the same method as described for the first operation.

You will see that most companies have not tried to do the impossible by making every operation absolutely automatic, but have done mechanically those things which were practical and have left to the old system, those operations which could best be done in the old way.

As time goes on, no doubt other operations will be transferred from the old system to the new.

Repentance is the virtue of weak minds.

Experience
is
the
best
teacher

OUR Furnace Experience is based on twenty-five years of practical work, plus the highest grade of modern engineering experience. Our record of building over one hundred porcelain enameling furnaces, without a single dissatisfied customer, speaks for itself.

"Buy from Bob"

The Ferro Enamel Supply Co.
Cleveland, Ohio

"First in Experience"

OUR Enameling Experience is provided by an organization including men practiced in enameling since 1889, and including the best of the modern ceramists. We have successfully produced millions of pounds of enamel, recognized by the trade as the best.

"Buy from Bob"

The Ferro Enamel Supply Co.
Cleveland, Ohio

"First in Experience"

OUR experience in furnishing general Supplies to the enameling industry is based on the fact that we were the first in this field. Ferro point bars, forks, cleaner and other items were built particularly for use in this industry.

"Buy from Bob"

The Ferro Enamel Supply Co.
Cleveland, Ohio

"First in Experience"

The Theory of Cleaning of Sheet Iron and Steel for Enameling Purposes

By Homer F. Staley in American Ceramic Society Journal

IN the process of manufacturing black shapes for enameling from sheet iron and steel, they become more or less coated with greases and oils. These may be fats and greases used to prevent rusting while the stock is being shipped or is in storage, or oils used in cutting and drawing operations.

In order to avoid trouble in subsequent operations, it is essential that all traces of these oils and greases be removed before the shapes are subjected to "pickling." The process of removing these oils and greases is known in enameling technology as cleaning. The following methods are available: (*a*) sand blasting, (*b*) heating, (*c*) use of solvents, and (*d*) use of alkaline solutions.

The use of the sand blast is almost universal for cleaning cast iron for enameling. For fairly large pieces of simple shape it is quick and economical and has the advantage of removing not only oils and greases but also oxide of iron and scale. Therefore, it takes the place not only of the cleaning but of "pickling" operations. However, on account of the high air pressures employed in the commonly used type of sand blasting apparatus, the mechanical action is too severe for thin sheets causing too much abrasion and warping. The sand blast is used to advantage for cleaning steel shapes made from heavy plates for chemical apparatus.

There is no inherent reason why a sand blast apparatus operating at low pressures should not be devised for the cleaning of large thin pieces of sheet metal in simple shapes such as stove parts, signs, and refrigerator linings. If, as is the case, it is possible to clean eggs by sand blasting it should be possible to clean thin steel shapes.

Cleaning by heating, commonly called "scaling" consists essentially of heating the ware to the temperature at which the oils and greases are volatilized or take fire and burn off. At the same time the outer layer of metal is converted to iron oxide and many of the strains set up in the metal during rolling, stamp-

---

The laugh of a child is the holiest music to ever fall on the ears of man.

ing, and spinning are relieved due to the annealing action in the furnace.

Since the formation of a heavy layer of oxide during the scaling operation is a decided detriment in the subsequent pickling operation, the process should be conducted in such a manner as to form the least amount of scale and to have this as loosely adherent as possible. The best results are obtained when the articles are first dipped in a solution of acid, are heated uniformly to the lowest temperature that will cause the oils and greases to be burned off and are cooled slowly, both heating and cooling being done with the admission of as little air as possible. The acid dip serves to partially loosen any heavy scale present and to cause the oxide formed during the heating operation to be fine grained and easily removable.

All oils, fats, and greases are readily removed by the use of solvents. The materials most available are benzol, kerosene, gasoline, and alcohol. Owing to the high cost of the solvents, the difficulty of recovering them and the fire hazards involved in their use, they are not used for cleaning enameling shapes. Occasionally a spot of grease or oil that has gotten onto a piece by accident is removed by swabbing it with a rag dipped in gasoline or kerosene.

The commonly used chemical method for the removal of oils and greases consists in the use of alkalis in water solution or of substances which on dissolving in water give alkaline solutions. The alkaline salt need not be caustic soda or potash. Salts of weak acids which hydrolize and give alkalis may be used. Caustic soda, however, is the most effective, part for part, with trisodium phosphate, soda ash, sodium silicate, and borax following, arranged in the order of their efficiency.

In many cases the alkalis act as water softeners and hence hard water must be avoided because the alkalis are partly wasted and likewise form soaps or insoluble gummy materials which may be deposited on the ware.

With reference to their action with alkaline solutions, oils and greases may be divided into two groups.

1. Saponifiable oils and greases. These contain "fatty acids" which combine chemically with alkalis in solution to form

Are You Using Higher Than 50 lbs. Air Pressure to Sandblast Green Castings or 60 lbs. for Removing Old Enamel?

If so, let us show you how FLINT SHOT sandblast abrasive *will operate at these low pressures* while it improves both the *quantity* and *quality* of your output.

The *free-flowing* properties of this pearl-like processed flint abrasive enable it to do *more work* per labor hour and horse power hour.

Its hardness accounts for its relative freedom from dust—and for its long-lasting qualities.

Its uniformity gives metal surfaces a soft, velvety matte' finish ideal for *holding* enamel.

FREE TRIAL OFFER

If you are not now using FLINT SHOT in your sandblast, ask us to send a sufficient number of 150-lb. bags to permit you to try it thoroughly under your own working conditions. You pay *only the freight* from our plant at Ottawa, Ill.

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

TONCAN METAL

Lowering the High Cost of Enameling

Enameling Stock sold on a "price" basis is usually made the same way. Today's "saving" in purchase price may not prove such a saving when production costs are figured. By the elimination of seconds and because of the ease with which it is enameled, Toncan Metal lowers production costs by reducing enamel expense. Actual tests have proved it so. There's a big difference between economy and low price. Enamel on Toncan and be sure of economy.

CENTRAL ALLOY
STEEL CORP.

Massillon, Ohio

TONCAN
METAL

Service
for the Enameler

The makers of Toncan Enameling Sheets are veterans in the knowledge of iron and its uses, for their lives have been given to its study. From the specially selected iron ore to the finished sheet, nothing is spared to insure a perfect product, free from gas and laminations—ideal for enameling.

If your requirements are of a special nature and you are striving toward the lowering of production costs, let us go into your problems. Our laboratories—our expert metallurgical advice—our every facility, is at your service.

CENTRAL ALLOY STEEL CORPORATION
Massillon, Ohio
New York Detroit Cleveland Syracuse
Portland Philadelphia Chicago San Francisco

TONCAN
METAL
ENAMELING SHEETS

soaps. They are of either animal or vegetable origin. They are also known as "fatty oils," which distinguishes them from both the mineral oils and the non-saponifiable animal and vegetable "essential" oils.

2. Non-saponifiable oils and greases. These contain no fatty acids and consist of mineral oils, essential animal oils, and essential vegetable oils.

A definite distinction must be made between the action of alkaline cleaners with saponifiable oils and their action with oils that are not saponifiable.

When saponifiable oils, fats and greases occurring on the ware are brought into contact with alkaline solutions they first undergo emulsification and then saponification. That is, they finally form soaps.

Emulsification consists of the formation of a suspension or one liquid in another in the form of very minute drops. In this case, when the alkaline solution comes in contact with the oil of grease the first action is the dissemination of the oil in small drops throughout the liquid. This effect is purely one of surface tension·

Next there is a chemical action between the fatty acid in the saponifiable oil and the alkali in the solution which results in the formation of a soap. As most alkaline soaps are soluble in water, the soap dissolves leaving the surface of the metal clean. Heating the solution aids in the formation of the soap and in its subsequent solution.

Saponification of the fatty oils not only serves to remove these oils from the ware but also aids in the removal of other oils and dirt due to the action of the soap formed. Soap aids in the formation of emulsions of the non-saponifiable oils and also in the removal of particles of grit by taking them into suspension. The later action is due to the circumstance that soap solutions have very low surface tensions. Therefore, when they envelop a particle of grit, the force with which the grit adheres to the surface of the ware is lessened, and the particle floats away or drops down into the bath. While the cleansing action of soaps is well known, it would be quite expensive to clean large quantities of ware by the use of regularly manufactured soaps. In this case, where there is present on the ware oils containing fatty acid,

A few years ago the ladies were wearing split skirts. Now they haven't any to split.

M and T

Tin Oxide
is Uniform in Quality

For five years we have been shipping tin oxide regularly to a long list of customers.

In all this time, the material has been of such uniform high quality that we have not received a single complaint of variation either in quality or working properties—and these oldest customers are continually recommending its use to others.

A good article sold at a fair price
will find an ever widening market

Metal & Thermit Corporation

Ceramic Department

Homer F. Staley, Mgr. R. R. Danielson, Director of Research

120 Broadway, New York City

one of the two chief ingredients of soap, it is quite logical to add alkali, the other chief ingredient, and to actually manufacture soap in the cleaning bath. In cases where large amounts of grease and oil are to be removed and there is little or no saponifiable matter present, both alkali and fatty acid (generally in the shape of rosin) may be added to the bath with advantage. A disadvantage in the formation of too much soap is that it is difficult to rinse it from the ware.

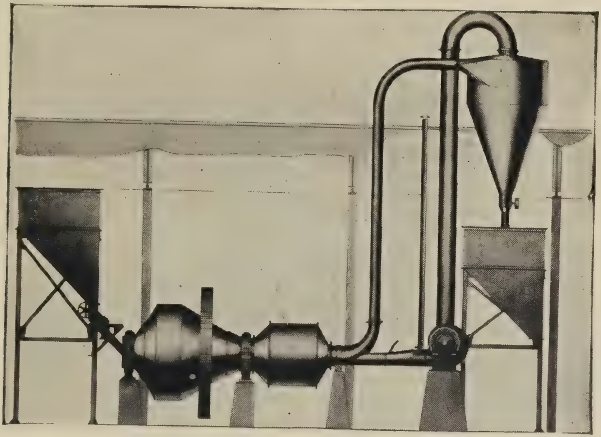
With non-saponifiable oils and greases, the first action of the alkaline solution is the same as in the case of the saponifiable oils. That is, an emulsion of oil in water is formed. Then the globules of oil gradually rise to the surface of the bath and coalescing, form a layer of oil on the surface.

This sounds very simple, but in actual practice it is very difficult to clean metals by emulsification of non-saponifiable oils by alkaline solutions alone. The emulsions do not form readily and are not stable; that is, they break down easily. Moreover, the globules of oil do not separate from the surface of the ware but adhere to it tenaciously.

The stability of the emulsion is dependent on the relative amounts of solution and oil, and on the amount of alkali in the water, or as it is at present fashionable to say, on the hydrogen-ion concentration. The greater the proportion of solution to oil and the stronger the solution is in alkalinity, the more stable the emulsion becomes. However, the greatest aid to the emulsification of non-saponifiable oils is the addition or production of a relatively small amount of soap. When any saponifiable oil is present, soap is produced automatically as explained above. Otherwise, soap or soap-forming ingredients may be added to the bath. Soap makes the emulsion more stable, preventing the breaking down of the emulsion as fast as it is formed and at the same time acts on the globules of oil in the same way that it acts on particles of grit, loosening them from the surface of the ware, thus permitting them to float to the surface of the bath. While a little soap is a great help, too much soap is a detriment since it makes the emulsion so stable that it will not break down at all so as to allow the oil to separate at the surface of the bath.

Another method of increasing the stability of emulsions is

A movie star is never shot in the back.



What We Are Pulverizing

Silica Sand	98.5% passing 325 mesh. No fan wear.
Feldspar	95% passing 325 mesh. Absolutely clean plant.
Clay	90% passing 80 mesh. High moisture, but grinds easily.
Grog.	90% passing 100 mesh. So hard it will cut glass, but can't hurt mill or classifier.

Can we help you solve your problem?

HARDINGE COMPANY
YORK, PENNSYLVANIA

WORKS AND
MAIN OFFICE
YORK, PENNA.

BRANCH OFFICES
NEW YORK, N. Y., 120 BROADWAY
SALT LAKE CITY, UTAH: NEWHOUSE BUILDING

CABLE
ADDRESS
"HARDINGMIL
NEW YORK"

Those who used to blow out the gas now step on it.

An ideal base for

PORCELAIN ENAMEL
ON
TRADE MARK
ARMCO
REG. U.S. PAT. OFF.
RESISTS RUST
INGOT IRON

"Yes, there is the ARMCO label." In hundreds of retail stores salesmen are telling prospects what the ARMCO label stands for on porcelain enameled products—that purer iron beneath makes possible an unblemished surface above.

ARMCO INGOT IRON
TRADE MARK
The Purest Iron Made

fine enameling—

that's why so many enamelers use ARMCO Ingot Iron—year in and year out

ARMCO Ingot Iron is an ideal sheet metal for fine enameling. For here is a purer, uniform iron, practically free from occluded gases and surface irregularities. In short, an iron made specifically for better vitreous enameling, with all the exacting care that such a product demands.

Enamelers who once use ARMCO Ingot Iron find serious cull losses caused by inferior base metal a thing of the past. The uniformity of this purest iron assures them economical operation, year in and year out.

If your enameling problems are founded in sheet metal our consulting engineers will be glad to give you their expert opinions and advice. Call on them—there is no obligation.

The American Rolling Mill Company
Middletown, Ohio

(Export) The ARMCO International
Corporation

Cable Address: ARMCO
Middletown

ARMCO TRADE MARK **INGOT IRON**
The Purest Iron Made

to add to the bath some solid so finely divided that the particles are colloidal in size. Their action is purely mechanical. Agitation of the bath either by passing into it steam or air by stirring greatly aids the separation of the emulsified oil from the surface of the ware. Quite often inert materials of size larger than colloidal are added to produce a scrubbing or scouring action when the cleaning solution is circulated past the objects to be cleaned.

In addition to the regular alkaline solutions there is also employed electrolytic alkaline cleaning. This method is growing more and more popular due to the decrease in the time required and the effectiveness of the cleaning. The concentration of the alkali solution used is usually about the same as in the method described above, about the only requirement being that the alkaline solution should be of high conductivity.

The articles to be cleaned are made the cathode and an iron anode is used or the iron cleaning tank is used as anode. The principle cleaning action results from the production of finely divided gases which lift off the oil or grease film and assist in its emulsification or saponification. This gas evolution likewise aids the stirring of the solution which continually brings fresh solution to the cathode surfaces.

From the foregoing discussion it is evident that there is no such thing as a "good cleaner for all sorts of work." For effective work the composition of the cleaner must be fitted not only to the amount of oils and greases present but particularly to the relative amounts of saponifiable and non-saponifiable oils.

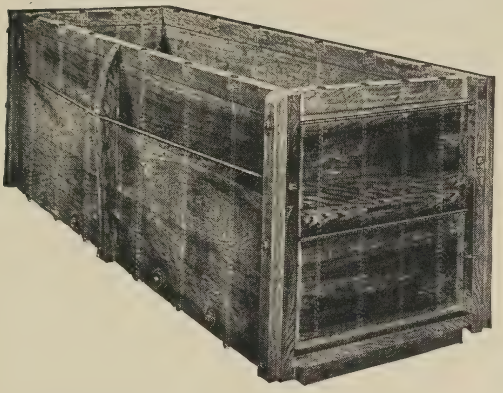
* * *

The Portsmouth Stove & Range Co. have developed a very efficient "kitchen cleanser," for cleaning enameled products. They write: "In the waste enamel which was not in good condition to re-use, and by combining this with other articles, we were able to get a very good cleaner, and incidentally use up a waste product."

* * *

POSITION WANTED: By Enameler of many years of experience in sheet steel and cast iron enamel. Can take charge of complete enameling department. Write Box "Z" ENAMELIST.

It's far better to build a fence at the top of a precipice than a hospital at the bottom.



Acid Pickling and Plating Tanks

are a specialty with us. These tanks are bolted with iron, Monel metal or B & M Bronze rods; depending upon the service required.

Lead-lined Pickling and Pitch-lined Plating Tanks can be furnished in any size.

Write for catalog—A Treatise on Wood Tanks

The Hauser-Stander Tank Company

Cincinnati, Ohio

A switch in time saves crime.

NOTES ON ENAMEL STRIKE IN BELLEVILLE

Of the four enamel shops in Belleville, Ill., the two largest continue to operate, using outside help. The other two have conceded to the Union's request for recognition, and are operating as union shops.

The trouble is said to have been started when one of the smaller shops transferred some enamel employes to the mounting dept. which has always been union.

The union employes in this shop walked out, returning when the enamel dept. became unionized.

Strike was then declared in the other three shops, one of which soon conceded to the union's request.

Strikers have been maintining headquarters in the Old Turner Hall, and picketing the shops which still claim to be open.

An investigation by the Mayor determined that no gangsters or gunmen are to be tolerated, and that watchmen are not permitted to carry weapons upon leaving their respective plants.

Physical encounters have been to date almost negligible both sides maintaining order to the best of their respective abilities, which gives the contest the appearance of being a battle of wits.

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Geo. I. Alden, engineer, educator, and one of the founders of the Norton Co., Worcester, Mass., died recently, at the age of eighty-three.

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Cullen W. Parmelee, director of the ceramic department at Rutgers University, New Brunswick, N. J., at the time of its inception in 1902 and continuing for a number of years thereafter, was awarded a Master of Science degree at the University Commencement exercises, June 12. Prof. Parmelee is now director of the ceramic department at the University of Illinois, Urbana.

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A dinner meeting of the Northern Ohio Section of the American Ceramic Society was held at the Hotel Winton, Cleveland, Ohio, on September 20th. S. S. Thompson was appointed Chairman. F. S. Markert was appointed Secretary and R. D. ("Bob") Landrum Councillor for the year. There were twelve members in attendance, and it was unanimously voted to accept the invitation of the Chicago Section to meet with them at Urbana, Ill. on November 19th and 20th. At Urbana they will inspect the Ceramic Department of Illinois University, and incidentally will be able to witness the Ohio-Illinois foot-ball game.

At the Cleveland meeting a round table discussion was held on Super-Refractories, New Developments in Dryers, and progress in Continuous Enameling.

The next meeting will be held November 1st.

Little things affect little minds.
~~~

You Can Help Make The Next Ceramic Convention a Success

Complete plans are now being made for the Annual Meeting of The American Ceramic Society, to be held the week of February 14th, Book-Cadillac Hotel, Detroit, Michigan.

A record attendance is expected. Seven meetings will be held in one, by the Divisions of Art, Enamel, Glass, Heavy Clay Products, Refractories, Terra Cotta and White Wares.

Special features and many interesting papers have been prepared by the Committee for the

ENAMEL WARE DIVISION.

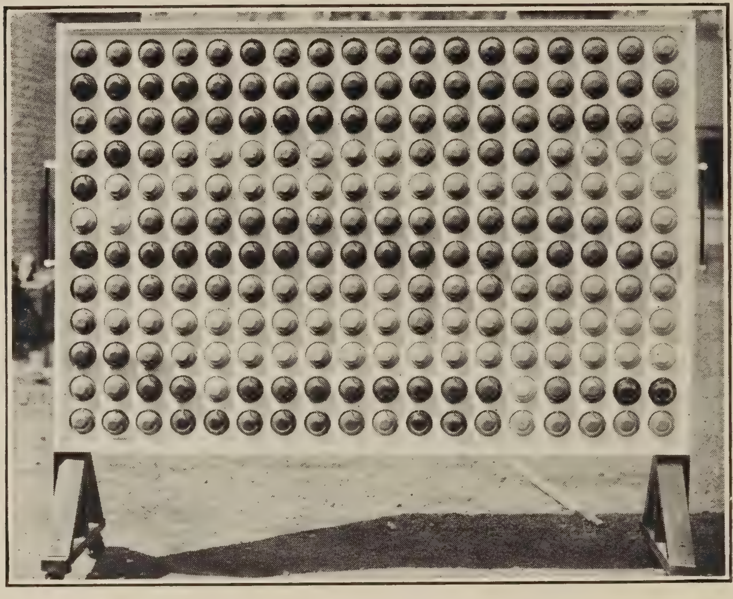
Arrangements for exhibitions can be made direct with the Manager of the Book-Cadillac Hotel, where exhibit will be held.

Instructive—Interesting—Entertaining

Plan to attend the 1927 Meeting

February 14th
Detroit, Mich.

Drakenfeld's line of color Oxides



Samples of Drakenfeld colors

Send us a sample of the color you wish to match, and let us show you the fine quality which we have established for our colors.

B. F. DRAKENFELD & CO., Inc.
50 Murray Street New York City

offers a complete range for the porcelain enameler

B F. Drakenfeld and Company was founded in the year 1869 and was the first concern in the United States to specialize in raw materials, chemicals, and vitrifiable colors for the pottery, glass and enamel industry.

At our plant in Washington, Pa., we specialize in the production of metallic oxides and in recent years close attention has been devoted to assembling a very extensive line of oxide colors for enamels.

These colors have been established as a result of the research work done by our technical staff with the collaboration secured from leading specialists for oxide colors in Europe.

B. F. DRAKENFELD & CO., Inc.
50 Murray Street **New York City**

Porcelain Enamel Digest

The work being carried on by the Gas Appliance Testing Laboratory, Cleveland, Ohio, is of growing importance to the industry and to the general public, as already more than 580 gas ranges have been approved, work having been under way since August 1. The testing of water heaters, house heating boilers and other appliances is being scheduled for completion early in 1927.

In making public the list of 580 gas ranges that have been approved, Mr. Conner, Director, said that the public's cooperation is needed to make this work a complete success. The American Gas Association reports that many of its member-companies have given repeated assurance that they not only will refuse to sell appliances not approved by the Laboratory, but will further attempt in every way possible to prevent the sale of them in their localities.

"Now everyone can demand a mark of approval on a gas range that means as much as the word Sterling on silver," says Mr. Conner. "This has been made possible by the support given the Laboratory by the gas companies of the country.

"In Baltimore, Md., and in New York City ordinances have been passed that restrict the sale of unapproved appliances. In Baltimore nothing but those gas-burning appliances that have been approved by the Laboratory can be sold, while in New York, gas tubing must conform to specifications which are in reality those of the Laboratory.

"The public must understand that the approval seal of the Appliance Testing Laboratory means that the appliance has been subjected to exacting tests for safety, quality and performance. When this fact is generally appreciated, the real benefit of the Laboratory's work will be manifest."

* * *

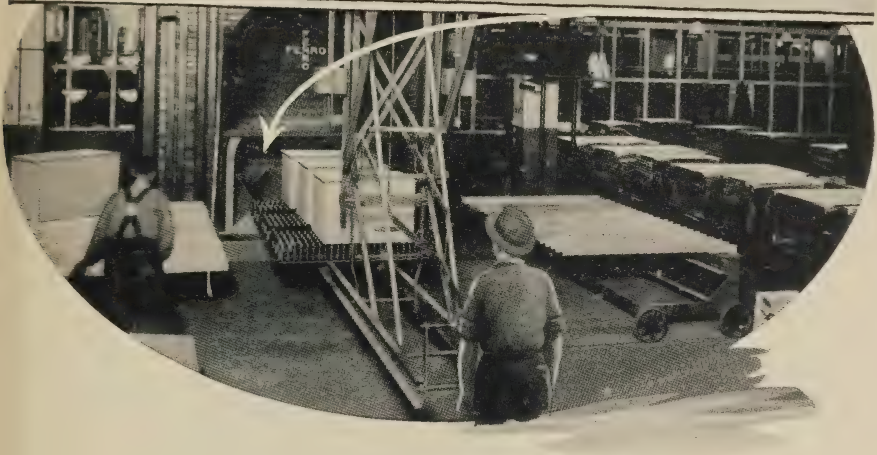
The Leonard Refrigerator Co., Grand Rapids, Mich., is re-building their porcelain enameling plant, and The Ferro Enamel Supply Co., of Cleveland, is installing a complete new pickle room and also an ALUNDUM Manion V type enameling furnace.

* * *

Celebrating its golden jubilee in the city of its birth, the American Chemical Society held its 72nd meeting in Philadelphia, Sept. 6-11, with a registered attendance of 2500. The 50th anniversary of the founding of the Society coincides with the 150th Anniversary of American Independence.

When you have punctuation marks in tire, its time to retire.

Alundum "V" Bottom Enameling Muffles in the Production of Electric Refrigerators



The illustration above shows one of five Alundum muffles of the Manion "V" bottom design in the plant of one of the largest producers of electric refrigerators.

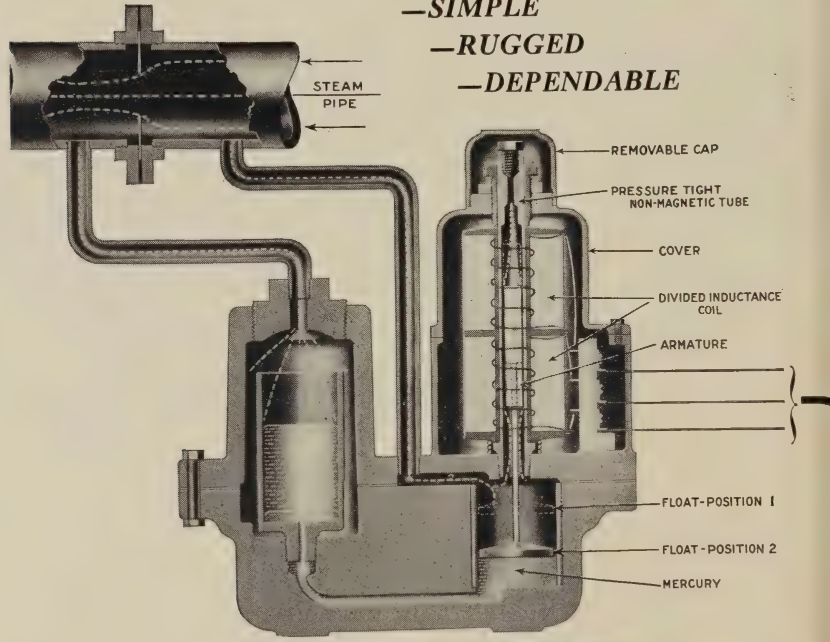
Alundum muffle plates were selected for use in this modern, high production plant because they are mechanically strong, chemically inert and have high heat conductivity.

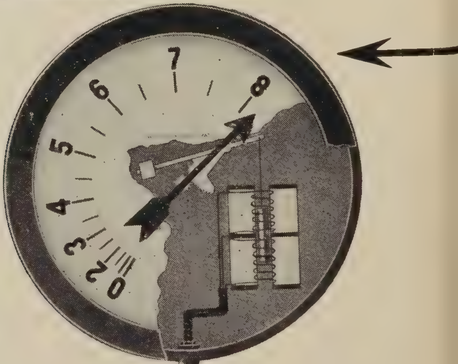
Norton Company, Worcester, Mass.

NORTON REFRACTORIES

THE NEW BROWN

A NEW PRINCIPLE
A NEW DESIGN
—SIMPLE
—RUGGED
—DEPENDABLE





12" Indicator
Single Scale

12" Indicator
Double Scale

ELECTRIC FLOW METER

THE ONLY FLOW METER USING THE INDUCTANCE BRIDGE PRINCIPLE

ELIMINATES OLD WEAKNESSES

Has no voltage regulator, no compensator, no "step" contacts dipping in mercury, no delicate bearings, no pressure-tight bushings in manometer, and no electrical circuits inside the pressure chamber.

RETAINS OLD ADVANTAGES

Provides all standard electric flow meter advantages, such as long-distance operation and flexibility.

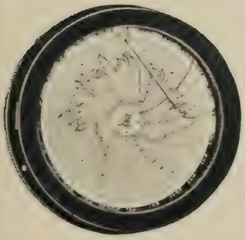
ADDS THESE REMARKABLE NEW FEATURES

1. A new principle makes this flow meter inherently independent of fluctuations in line voltage.
2. All electrical parts and connections are entirely outside the pressure chamber.
3. An electric circuit at the manometer, indicator and recorder consisting simply of stationary divided inductance coils requiring only three connections, permanently made at the time of installation.
4. Extra indicators or recorders working off the same manometer may be connected at will, without interfering with the readings of the connected meters.
5. An integrator that you can read directly, as easily as you read your automobile mileage indicator.
6. Electric clock motor requiring no hand winding.
7. A recorder that produces a separate record of TOTAL FLOW for any period, on the same chart.

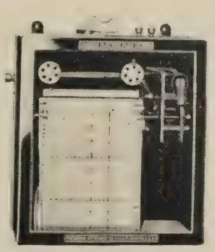
Fully described and illustrated with details of the new inductance bridge principle, in Brown Electric Flow Meter Catalog No. 20.

Send for Copy.

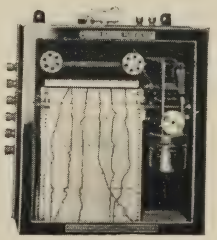
Address—The Brown Instrument Company, 4594 Wayne Avenue, Philadelphia, Pa., or any of our district offices at New York, Boston, Pittsburgh, Cleveland, Columbus, Detroit, Chicago, Indianapolis, Birmingham, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City or Montreal.



Combined Indicator Recorder and Integrator



Continuous Strip Chart Recorder



Multiple Recorder Strip Chart

After the many wonderful letters received, congratulating us on our Birthday, we can't help but feel our efforts have been worth while, and we are anxious to work harder than ever during the coming year. We quote here a letter from K. F. Ritter, Favorite Stove & Range Co., Piqua, Ohio: "The members of our organization are always interested in receiving the ENAMELIST, and we derive a lot of good information from same, and believe it is the *best* and *only* publication pertaining to the Enameling Industry."

* * *

This is a photomicrograph showing uniformity of grains in Norton Alundum and Crystolon polishing and grinding wheels. New processes recently developed by the Norton Co. enable them to produce an abrasive unusual in uniformity and strength.

* * *

The Moore Bros. Co., Joliet, Ill., have installed a new **ALUNDUM** Manion V type enameling furnace.

* * *

We announce with pleasure that the Delco Light Co., Div. of General Motors Co., has placed contract for ten 5' x 12' porcelain enameling furnaces, complete with forks, dryers, etc., to be installed in their new $20,000,000.00 plant at Dayton, Ohio. Manufacturers of "Frigidaire" electric refrigerators, they are at present operating five enameling furnaces, with continuous enameling equipment. The additional ten furnaces will be Manion V type, made of Alundum tile, and Hurricane Dryers will be furnished. The complete order was placed with The Ferro Enamel Supply Co. of Cleveland.

* * *

General Necessities Corp., of Detroit, Mich., have purchased the business of the Vogt Refrigerator Co., Louisville, Ky.

The pedestrian has to be light on his feet not to light on his head.

Ferro agrees—

"Any feldspar won't do"

As producers of porcelain enamels known the world over for faultless quality, the Ferro Enameling Company, Cleveland, Ohio, must be particular about the feldspar they use. **Dominion Potash Feldspar** is the standard spar employed for Ferro Enamels—selected because of its known purity and uniformity.

Every ton of Spar we sell bears out our statements. Our business has been built upon the confidence Ceramic men have put in our product. Our reputation depends on the Feldspar we sell you—we cannot afford to "take chances," we give you the best we have always.

UNIFORMITY SUPPLY QUALITY

"DERRY"
from
Buckingham, Que.

These are the brands that so many of the Potteries find absolutly satisfactory, and we would be pleased to send you a liberal trial sample; just drop us a card.

"IMPERIAL"
from
Verona, Ontario

Every Carload Guaranteed

DOMINION FELDSPAR CORPORATION, Rochester, N. Y.

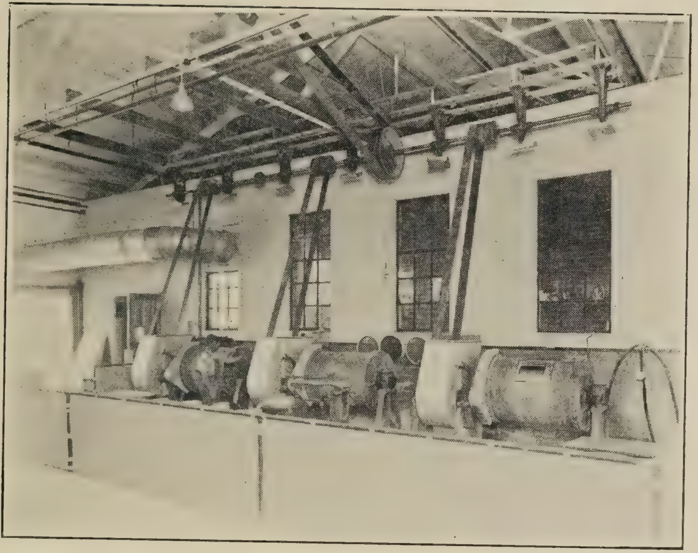
The Leaders in the Patterson

Pebble Mills for Wet Grinding

Pebble, Ball and Tube Mills
for Dry Grinding

THE PATTERSON FOUNDRY & MACHINE CO.
RICHARD L. CAWOOD, President
EAST LIVERPOOL, OHIO

Enamel Industry are Equipped



Patterson Closed Circuit Grinding System for Dry Grinding
Porcelain and Silex Mill Linings
Flint Pebbles and Porcelain Balls

THE PATTERSON FOUNDRY & MACHINE CO.
RICHARD L. CAWOOD, President
EAST LIVERPOOL, OHIO

Electric Refrigeration Corp., 2448 Buhl Bldg., Detroit, Mich., will build plant on Plymouth Road for the manufacture of electric refrigerators.

* * *

The Enduro Porcelain Enameling Co. of Middletown, Pa., has just installed an additional furnace and speed fork. This install tion was made by the Porcelain Enamel & Mfg. Co. of Baltimore.

* * *

THE SERVEL CORPORATION

In his remarks accompanying the report of The Servel Corp. for the six months ended June 30, H. G. Scott, president, points out that the company began to function as a national distributing organization in January this year and quantity production of units followed shortly thereafter—the additional capital necessary for these enlarged operations being secured last April.

"Mass production and distribution," Mr. Scott said, "cannot be instituted instantly, but the accomplishment on both counts has been gratifying, for we have established over 2,000 distributing points for our refrigerators. Sales to these points are handled through eleven branch offices. Over 80% of our product is marketed through the public utility companies."

Mr. Scott also points out that favorable contracts entered into with International General Electric Co. and others for the sale of Servel refrigerators in foreign countries should be reflected in 1927 earnings. There will be a limited production of gas-fired refrigerators late this year and quantity production in 1927.

* * *

FIRMS EXHIBIT AT SESQUI-CENTENNIAL

A number of firms, including the Crane Co., the American Radiator Co. and the Wolff Mfg. Co., have exhibits at the Sesqui-Centennial Exposition which is being held at Philadelphia, Pa. The Crane Co. has a beautiful display of a bathroom, the floor being black, white and red, and the walls and ceiling being green and gold. This room is equipped with a tub set in a recess, using a glass folding curtain, and with a lavatory, dental lavatory, dressing table, chair type toilet and mirror medicine cabinets. In another section, kitchen sinks, water softeners and water heaters are shown. The third part of the booth is another bathroom with marble fixtures and a glass enclosed tub and shower.

The display of the Wolff Mfg. Corp. of Chicago consists of the company's line of enameled ware and vitreous china, featuring tubs, built-in showers, toilet combinations, kitchen sinks and wash stands.

The Associated Tile Manufacturers, in a model tile bungalow, show several complete bathrooms.

The bigger the summer vacation, the harder the fall.

We are particularly pleased with a letter from Carl Mehling, the well-known Manager of the American Radiator Enameling Plant. We quote as follows:

The Enamelist Publishing Co.,
2100 B. F. Keith Building,
Cleveland, Ohio.
Gentlemen:

Congratulations to the staff of the ENAMELIST on the Third Anniversary of your very instructive, as well as newsy magazine. We have derived much benefit and instruction, as well as many a hearty laugh, and wish many more birthdays to your valuable paper.

Very truly yours,
AMERICAN RADIATOR CO.,
R. H. Schwendler,
Supt. Enamel Plant for Mr. C. W. Mehling, Manager Enamel Plant.

We are sorry we can't print all of the nice letters we received, congratulating us on our Birthday. Here are a few, that we can't resist quoting:

"It is valuable and interesting. Be sure to keep me on your list." D. S. Lamb, Michigan Enameling Co.

"The ENAMELIST fully merits our highest compliments." Mark A. Brown, Globe Stove & Range Co.

"You are to be congratulated on your enterprise in presenting news and interesting articles." N. P. Burt, Great Western Stove Co.

"It is the only trade paper I look forward to with any degree of interest, and I've excluded all the rest of them from my list of papers to which I subscribe." G. Harry Frank, Meyercord Co.

"The ENAMELIST is a gold mine of information." C. S. Borland, Ironton Stove & Mfg. Co.

"We have enjoyed all of the articles, and have profited by the many suggestions made." Jos. A. Buckwalter, M.D., Buckwalter Stove Co.

We can't forget it's our Birthday, so are quoting here an interesting letter from Ross C. Purdy, Secretary of the American Ceramic Society:"

"Anniversaries are always worthy of celebrations. They are milestones by which progress is measured. We like to look at the ENAMELIST today and realize that it has developed to what it is during the past three years.

It has served a good purpose because it has been ably conceived and ably produced.

I congratulate the Enamelist for sticking to its own business industriously and with success."

Many a rich man is a poor scout.

"Congratulations and Best Wishes on your Third Birthday," writes A. M. Meech, of the List Mfg. Co. "Mr. Tyler joins me in wishing you many successful years."

~~~

Here's a group that is trying hard to take some of the bugs out of the enameling business. It's a combination of the technical staff of The Ferro Enameling Co., and the B. F. Drakenfeld Company, with our Editor thrown in, to take the curse off of this high-brow collection.

The picture was taken recently at the Drakenfeld Laboratories, in Washington, Pa. Reading from left to right you will note, Messrs. Cushman, Pelletier, Ebright, Hansen, Shively, Brenner, Weaver and Trathowen.

~~~

Recently the Globe Stove & Range Co., Kokomo, Ind., played host to five hundred high school students, on an inspection tour through its plant.

Mr. Mark Brown, General Manager, arranged to have each department explained fully to the students, and in order to further stimulate their interest in Globe Stoves, offered cash prizes for the best papers written on observations in each of the departments visited.

Production is the secret of high wages.

$53.19 Saved Per Day at Large Enameling Plant with "HURRICANE" Dryer

THIS dryer has been in operation since 1924, handling 60,000 lbs. of boiler castings every 24 hours. It handles a variety of pieces, weighing from 3 to 250 lbs each. There is no rusting in wet weather, 6 men are saved as compared with previous methods.

The investment effects a net economy of $14,361.30 per year. Let us give you the facts on a dryer to handle your product. All capacities are guaranteed.

Name of above installation on request.

HURRICANE
Ideal Drying Every Day

The Philadelphia Drying Machinery Co.

Stokley Street above Westmoreland
Philadelphia, Pa.

Special Agents:

FERRO ENAMEL SUPPLY COMPANY
2100 B. F. Keith Bldg. Cleveland, Ohio

New England Agency:

HURRICANE ENGINEERING COMPANY
53 State Street Boston, Mass.

TRADE GOHI MARK
REG U S PAT OFF

Gohi Enameling Stock

is the ultimate in Sheets for enameling purposes. It means satisfaction to all of the many users. Constant study of the needs of our clients, and the continuous application of the results of such study, in the way of improved methods in our plants, has established a reputation for unsurpassed reliability.

After you have investigated the possibilities of GOHI (Genuine Open Hearth Iron), we know what your decision will be.

Write to us for information on the advantages and economics of using this purer sheet metal for a base for vitreous enameling.

The Newport Rolling Mill Company
Newport, Kentucky

TRADE GOHI MARK
REG US PAT OFF

Because of its Uniformity-

GOHI (Genuine Open Hearth Iron) Enameling Sheets will reduce the percentage of rejects to a minimum.

Every working day of the year, the enameler is enabled to turn out a product that is much more economical to manufacture and easy to sell.

GOHI measures up to carefully maintained standards—purity, uniformity and practical freedom from occluded gases, and possesses the satin-like surface which is indispensable to the production of clean, adherent enamel coating.

We solicit your inquiries.

The Newport Rolling Mill Company
Newport, Kentucky

We regret to hear of the death of Mr. Charles W. Wells, at Buffalo, on July 30th.

Since 1877 he had been with the firm of Sidney, Shepard & Co., of Buffalo, and although beginning in one of the clerical positions, his ability had so forced its recognition that when the Republic Metalware Company was formed in 1905 as a successor to the above firm, he was its first President, and so continued through the remainder of his life.

~ ~ ~

VAST FIELD FOR ELECTRICAL REFRIGERATION

A survey of the sales possibilities of the electrical refrigeration system, recently made by the Architectural Forum Research, discloses the fact that "current construction of new buildings alone will furnish an annual American market for 1,273,000 household electric refrigerators. These new buildings furnish an immediate market for 850,815 electric refrigerators with a potential market for 1,273,340 installations.

"Hospitals, apartment hotels, of from 24 to 300 apartments, and dwellings costing $50,000.00 or more will almost without exception utilize electric refrigeration in 1926 construction. 90 per cent of the industrial cafeterias built, 90 per cent of all hotels having more than 100 rooms, and 90 per cent of all apartments having a capacity of from 49 to 114 families will have electric refrigeration," the survey continues.

The figures show that of the 175,000 dwellings of the better sort erected each year, 89,000 can be expected to install electric refrigeration. The apartment house field is even more attractive. There are approximately 45,000 apartment houses built in the United States each year, and these will call for more than 600,000 electric refrigerator installations.—Ceramic Industry.

~ ~ ~

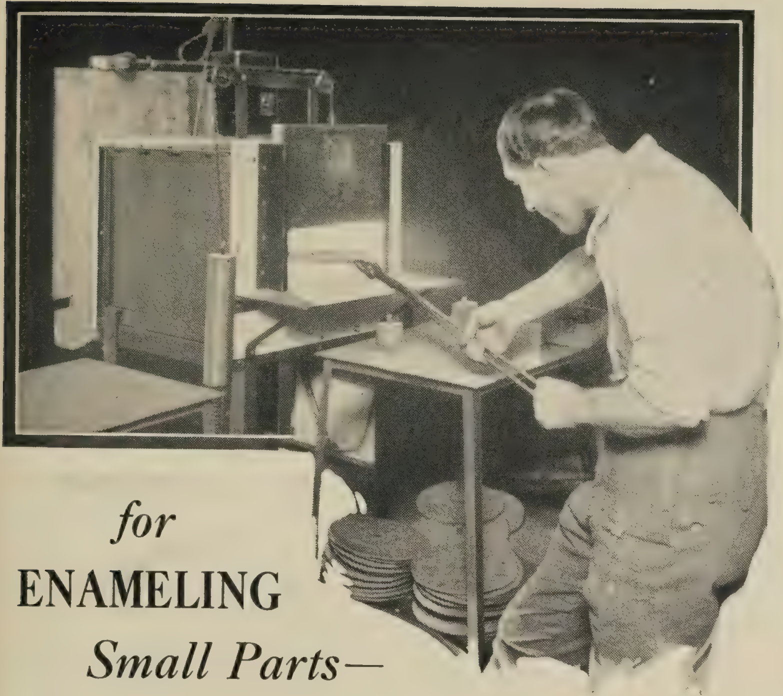
A paper giving the results of an investigation on the thermal expansion of transparent and non-transparent fused silica of various temperatures ranges between 125 and 1,000 deg. C., has been issued in booklet form by the Bureau of Standards labeled No. 524.

A critical temperature or minimum length was found at about 80 deg. C. Expansion occurred on heating fused silica above the critical temperature or cooling below this temperature. This booklet may be had from the Superintendent of Documents, Government Printing Office, Washington, D. C., for ten cents.

~ ~ ~

Owen Heat Unit Co., Detroit, Mich., has been incorporated with 1,500 shares no par value and $150,000 capital to manufacture gas, oil and electric stoves. W. I. Owen, T. H. Conway and H. D. MacKaye are the incpororators.

It is getting so girls don't care how they look, just so they don't look like girls.



for

ENAMELING

Small Parts—

SALES OFFICES
Boston—New York
Cleveland—Chicago
San Francisco

The American Badge Company and the L. D. Auld Company use several Hoskins Furnaces, like the one shown here, for the enameling of badges and various emblems of delicate design.

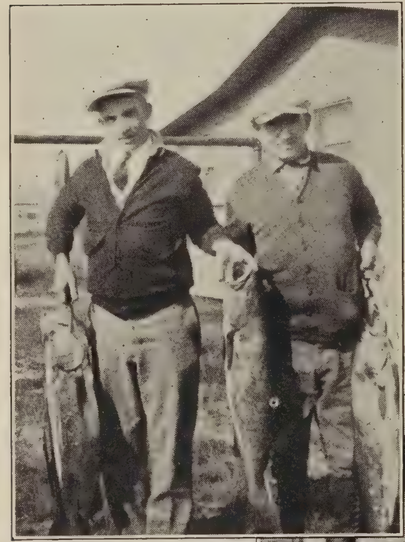
The temperature is of course very accurately and easily controlled; the atmosphere is free from harmful gases—and the finished product is an almost perfect piece of enameled work.

For experimental work, or small scale production, these furnaces are ideal. Send for catalog.

Hoskins Manufacturing Company
4430 Lawton Avenue Detroit, Mich

Hoskins Electric Furnaces

Originators and Manufacturers of Chromel The Alloy that made Electric Heat Possible



SOMETIME ago we announced a prize for the champion fish-story, supported by pictures. This contest is still open, but we feel that R. V. Polen, Master Mechanic at the Delco-Light Co., has quite a jump on all the competitors. He spent his vacation in California, and the picture here shows the results of his efforts. If any of you fellows interested in enameling think you can beat this record, send in your photo's quickly, as we're now having a brown derby framed, so we can present it promptly to the winner at the end of the season.

* * *

The Chicago Enamelers' Club inaugurated their Fall Season recently, with Albert Vodica, Aetna Porcelain Co., presenting a very fine paper on "Cast Iron Enameling." Mr. Ben F. DeVorak, of Crown Stove Works, gave an interesting talk on synthetic cryolite. He stated that this material, he found, gives an enamel more flexibility, and a better gloss.

Bruce F. Wagner resigned as Chairman of the club, and J. A. DeCelle continues as Chairman. Their next meeting will be held October 26th.

Golf unnecessarily prolongs the life of some of our most useless citizens.

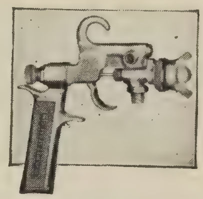
Highest Quality—Lowest Cost Application *of* Porcelain Enamels

with DeVilbiss Spraying Equipment

DeVilbiss spraying equipment for applying porcelain enamels insures highest uniform quality and lowest cost results on every style, size and grade of product.

This is the DeVilbiss adaptability and performance record in scores of the country's leading enameling plants.

Investigate this improved, well-established DeVilbiss way of finishing. Further facts, applicable to your individual requirements, will be gladly mailed. Address—



This Type A DeVilbiss Spray Gun is the biggest single development ever brought out for spray-finishing. . . . . It embodies many unparalleled, exclusive mechanical and working features. . . . Its design and construction make for the simplest possible operation, care and cleaning.

The DeVilbiss Company *284 Phillips Ave.* **Toledo, Ohio**

DeVilbiss

Spray-finishing System

Complete Units for Every Finishing Room Requirement

Spray Guns : Booths : Exhaust Fans : Handling Devices : Compressors

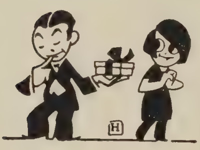
Bits of Frit

IRISH SITUATION

It was a wordy fight, and the little man with what looked like two pounds of sausages under his arm gave his parting shot.

"The sooner," he said, emphatically, "that I never see your face again the better it will be for both of us when we meet."—*Smith's Weekly (Sydney).*

WHAT A $3 AD DID



An Oklahoma girl advertised for a husband, and landed one within a very short time. The advertisement cost $3. She paid the wedding expenses, $9. In less than a year the husband died, says the Atchison *Globe,* and left his widow an $11,000 insurance policy.

Now will you admit that it pays to advertise.?

—*Team Work.*

* * *

Mrs. Sambo—"Sambo! Sambo! Wake up!"
Sambo—"Ah cain't."
Mrs. Sambo—"Whyfore cain't yu'?"
Sambo—"Ah ain't asleep."

OVERHEARD ON THE STREET

Boss (to gang of street laborers loafing on the job)—"Hey, youse, snap out of it! What d' ye think y' are—a bunch o' champeen prize-fighters?"

ADVERTISING DID IT

A butcher in a certain town had read a good deal about "Milk from Contented Cows," and, wanting to keep up with the times, he placed this sign in his window: "Sausages from pigs that died happy."

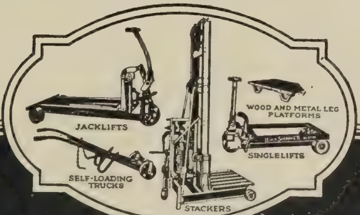
—*Ad. Chat.*

A road hog is a driver who takes his half of the road out of the middle.

THE SINGLELIFT—*Moves Heaviest Loads Quickly and Carefully*

The "Singlelift" is standard equipment in the best enamel shops. It's low in cost and a regular horse for work.

WRITE FOR CATALOG



Lewis-Shepard

BOSTON

MIXED BREED

"Yes, suh, tha's a Sausage Houn'."
"What do you mean, Sausage Hound?"
"Well, suh, everyone that sees him says, ' I never saw such a houn'."
—*Brown Jug.*

* * *

Small Boy: "What's the use of washing my hands before I go to school, mother? I'm not one of those who are always raising them."—*Orange Owl.*

* * *

BEEZNESS

"Vy for you're in a hurry?"
Said the father to his son,
"Dot you take two steps at oncet
Up de stairs instead of vun?"
"Vy, to safe shoe leathers, poppa,"
As the father looked askance.
"Vell, be careful," said his poppa,
"Dat you do not split de pants."
—*Oklahoma Whirlwind.*

* * *

Marriage is an institution.
Marriage is love.
Love is blind.
Therefore marriage is an institution for the blind.—*Sewanee Mountain Goat.*

* * *

VERY SYMPATHETIC

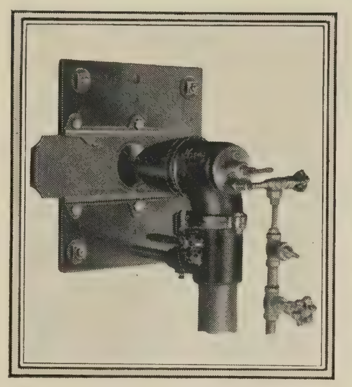
Teacher—"If there are any dumbbells in this room, please stand up."

A pause, then finally Johnny stood up.

"What, do you consider yourself a dumbbell?"

"Well, not exactly that, teacher, but I hate to see you standing all alone!"—*Kreolite News.*

He ceases to grope when he begins to grip.



The Oil or Gas Burner

is only a small part of your complete equipment, but it's a mighty important one.

With extensive research, practical experience and precision Ryan Engineers have developed their burner line for gas or oil at high or low pressures.

Pioneers in the development of industrial heating equipment, Ryan builds complete furnaces of every type—automatic, continuous or stationary, using coal, oil, gas or electricity.

When you think of industrial heating equipment think of Ryan Engineers.

They are ready to serve with even the smallest part of the largest unit, each with exacting care, backed by many years of successful experience. Any industrial leader will confirm this.

If you burn oil or gas industrially and are not using the Ryan System of Automatic Combustion and Temperature Control you are at a disadvantage to the organization that does, in from 20 to 40% in the cost of your heating.

Complete Bulletins on Ryan Burners, Automatic Controls, and auxiliary heating equipment will be sent upon request.

F. J. Ryan & Company
Wissahickon and Yelland Sts.
PHILADELPHIA

Twelve branch offices located at strategic positions throughout the United States.

RYAN
INDUSTRIAL HEATING EQUIPMENT

A pretty girl likes to be told she's intelligent. An intelligent girl likes to be told she's pretty.

THANKS! ONE AND ALL.

Enamelist Publishing Co.,
Cleveland, Ohio.
Gentlemen:

I extend congratulations to you on your Third Anniversary.

For a trade paper so young, one wonders at the veteran way in which it is published. There is something good in every issue.

May you have continued success in the future.

Yours truly,
S. H. Hobson,
Chief Engineer
Geo. D. Roper Corp.

Please accept our congratulations on the third birthday of the ENAMELIST. To the best of our knowledge this publication still holds its unique position as the only strictly enameling medium in existence.

J. C. DeVol,
A-B Stove Co.
Battle Creek, Mich.

I have found the ENAMELIST a newsy and interesting publication and it fills a distinct field in the enameling industry.

B. T. Sweely,
Baltimore En. & Nov. Co
Baltimore, Md.

Congratulations on the ENAMELIST'S third birthday. During this short period it has established itself as the porcelain enameling industry's greatest trade paper.

Albert L. Vodicka,
Aetna Porcelain Enameling Co.
Chicago, Ill.

I take this opportunity of congratulating you on your trade paper ENAMELIST. Can truthfully say that it is one of the very few papers that we look forward to receiving. Read it each month from cover to cover. We comment on snappy up to date articles which you carry. My one wish is that your future will be more successful than ever.

H. T. Bebb, Pres.
Canton Stamping & Enameling Co.,
Canton, Ohio.

E verything about enameling
N o lingo you can't understand,
A nd I don't mean maybe.
M any helpful suggestions, and
E ach one if tried gives good results.
so
L et the fishermen tell their stories
I t's good readin', and cures a frown, for
S ome one soon will surely tell us, (in the Enamelist)
T hat a cure for fishscale has been found.

E. V. Swanson,
Rock Island Stove Co.
Rock Island, Ill.

I envy you the deep satisfaction you must have from having created the ENAMELIST and directing it through three such successful years.

Has it ever occurred to you that the existence of the ENAMELIST is coincident with the greatest development that the enameling field has ever known?

R. D. Landrum, Mgr.,
Ceramic Materials Dept.
Titanium Alloys Mfg. Co.

Keep putting your goal farther ahead. Partial success brings mental laziness.

ASBESTOS PRODUCTS
for Enameling and Allied Industries

Asbestos Fibre
Asbestos Yarn
Asbestos Cord
Asbestos Thread
Asbestos Cloth
Asbestos Clothing
Coats
Pants
Aprons
Mittens
Gloves
Patches

This is the famous reinforced mitt which is being used by the biggest enameling companies in the business. In a comparative test it lasted 100 hours longer than the next best mitt. Let us send you a trial pair.
Also furnished in reversible style, re-inforced both sides.

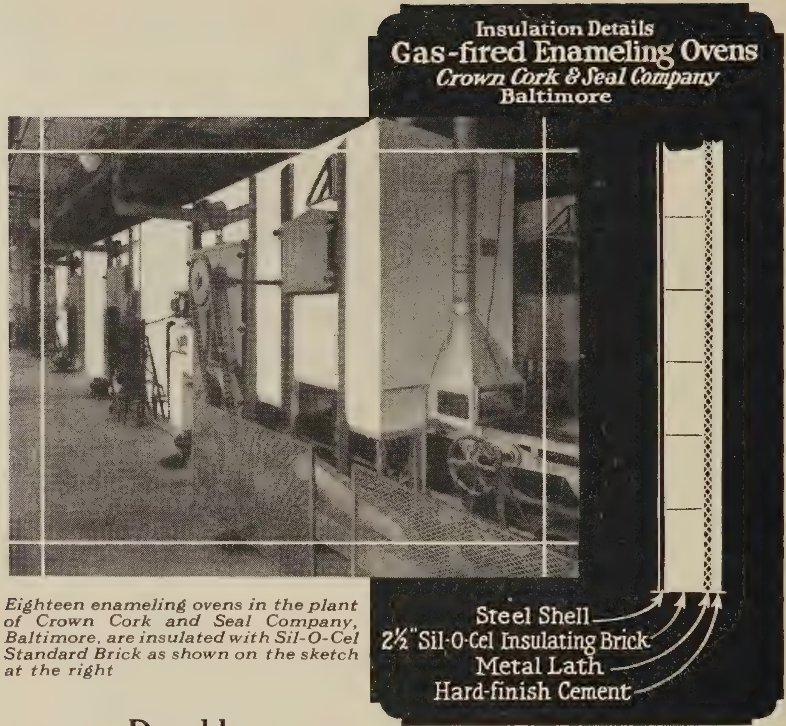
High Temperature Insulation for Hurricane Dryer and other makes.

High Temperature Blocks also 85% Magnesia Blocks.

Write for descriptive list and prices of full line.

Keasbey & Mattison Company
AMBLER, PA.
Cleveland Office
1160 West 11th St.

The Largest Plant of its Kind in the World.
If it's made of ASBESTOS we've got it!


Insulation Details
Gas-fired Enameling Ovens
Crown Cork & Seal Company
Baltimore
Steel Shell
2½" Sil-O-Cel Insulating Brick
Metal Lath
Hard-finish Cement

Eighteen enameling ovens in the plant of Crown Cork and Seal Company, Baltimore, are insulated with Sil-O-Cel Standard Brick as shown on the sketch at the right

Durable

THE SIL-O-CEL insulation that was installed ten years ago on the enameling ovens in the Guilford Avenue plant of Crown Cork and Seal Company, is still doing full service.

It has undergone even more than ordinary operating conditions. About three years ago when the ovens were moved to the new Highlandtown plant of the Company, the insulating brick were torn off from the walls and salvaged with practically no loss. Today they are as efficient non-conductors of heat as ever. Sil-O-Cel insulation never wears out or deteriorates in insulating value. It is composed of practically pure silica in cellular form, as stable a material as the sands of the sea. Millions of dead air spaces to the cubic inch, of microscopic size, give it its great heat-retarding properties.

To enable you to provide for permanence in the insulation of any heated equipment Sil-O-Cel is supplied in a wide variety of forms that cover all structural requirements. Wherever heat is used it pays undiminishing dividends in heat savings.

Write for Bulletin T-8 which describes the insulation of furnaces and ovens.

SIL-O-CEL

TRADE MARK REGISTERED U. S. PATENT OFFICE

HEAT INSULATION

Another addition to our laboratory and smelting department is hardly completed before our ever growing business requires still further expansion

Keep On
Buying from Bob

The Ferro Enameling Company
Cleveland, Ohio

The AVERSION *to* CHANGE

deprives the Englishman of running water in his house, the Frenchman from having a bathtub, the Swiss from having a hot air furnace, the Chinaman from using machinery, and a few enamelers from trying OPAX.

All progress is based on stepping up — changing.

OPAX breaks a habit, but pays for it.

OPAX demands no change in process or plant. The only thing you've got to change is your mind, and OPAX pays real money for that.

Our job is to get every enameler to give OPAX a thoughtful trial. It will then sell itself.

TAM
OPAX

THE TITANIUM ALLOY MANUFACTURING Co.

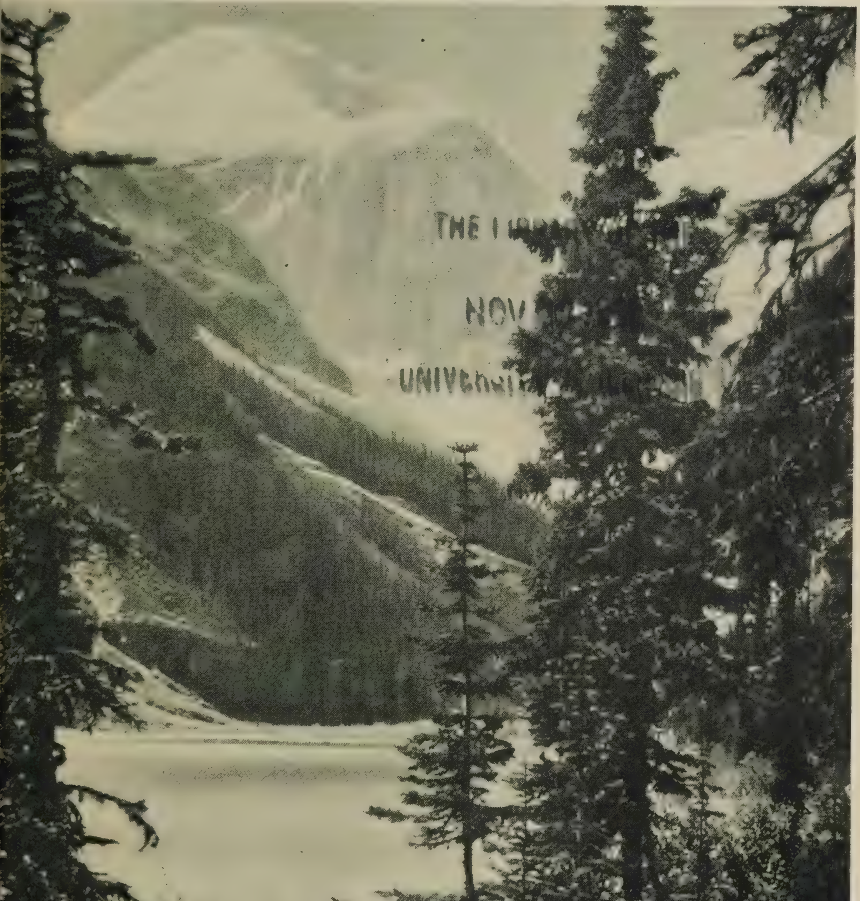
Works at Niagara Falls, N. Y.

CERAMIC MATERIALS DEPARTMENT R. D. LANDRUM, GENERAL MANAGER
6007 EUCLID AVENUE, CLEVELAND, OHIO

EN

The Enamelist

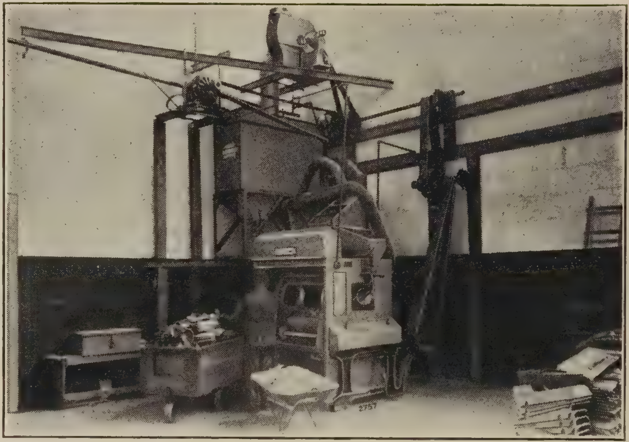
A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY



THE L
NOV
UNIVERSIT

NOVEMBER, NINETEEN-HUNDRED-TWENTY-SIX

SAND-BLASTING WITH PROFIT



Pangborn Type "GD-1" Sand-Blast Barrel with complete Ventilating System at plant of Buckwalter Stove Co., Royersford, Pa.

Sand-Blasting is a necessity in the Enameling Industry today.

Sand-Blasting for Profit is another thing. It is your *cost* of cleaning—that few cents on each ton of output *every day*.

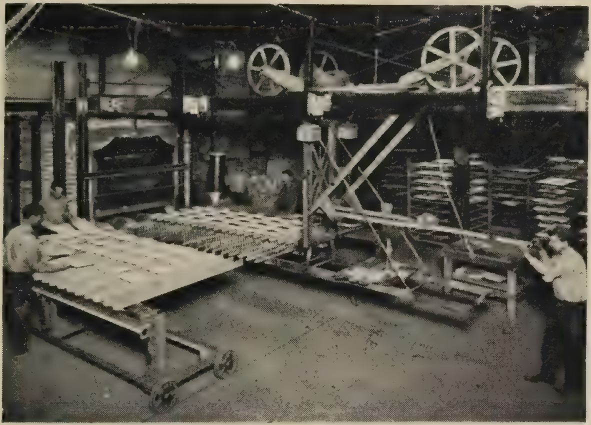
Output per hour—and hour after hour—is what makes Sand-Blast production economical.

There is Pangborn Sand-Blast Equipment specially adapted to every phase of the Enameling Industry. It is the result of 20 years of Sand-Blast building. It is free from stoppages and shutdowns for adjustment and repairs—the secret of *profitable* Sand-Blasting.

Get our Handy Hand-Book
on Sand-Blasting. It's free for asking.

Pangborn Sand-Blasts
and Dust Suppression Equipment

Pangborn Corporation Box 853 Hagerstown, Md.



"ALUMITE"

Muffles for Maximum Results per Dollar Invested

Operating Data from one of our Combination Silicon Carbide Thin Section High Alumiuous Muffles

Production—14,000 pieces medium Kitchen ware per 24 hour day with Speed Fork.
Fuel Consumption—Exceptionally low.
Maintenance Costs—None.
Length of above service—one year.
Estimated additional life—1½ to 2 years.
Initial Cost—about 30% of cost of Furnaces usually recommended for similar service.
Size—4 ft. x 10 ft. Muffle.

May we assist you?

Send for Bulletins Nos. 23 and 24

The Massillon Refractories Co.
(*Founded by W. G. Hipp*)
Massillon, Ohio
On the Lincoln Highway—Convenient for Truck Delivery

A Considerable Saving in the Cost of Removing Enamel at Cribben and Sexton's

A series of engineering tests, made for Cribben and Sexton Company, Chicago, demonstrated that FLINT SHOT was effective in removing both wet-process and dry-process enamel at LOWER AIR PRESSURES—and in a SHORTER TIME (less labor hours) than they had been using, with another abrasive.

Wet Process Reclamation

Wet process enamel was removed from stove legs, about 4 lbs. in weight at 100, 80, 70, 60 and 50 lbs. air pressure; first with ¼ in nozzles and later with ⅜ in. openings.

Abrasive	Orifice	Pressure	Time per Piece	C. F. M. Free Air	H. P. Hour Per Piece
Flint Shot	¼"	100 lbs.	70 seconds	148.40	.635
Flint Shot	⅜"	60 lbs.	66 seconds	121.50	.228

As a result we recommend ⅜ in. nozzle at 60 lbs. to replace their former practice of ¼ in. orifice at 100 lbs.—effecting the substantial saving shown in the table.

Dry Process Reclamation

Dry process enamel was removed from stove tops, weighing 14 lbs. each at the same range of pressures—and nozzle-openings, with the following results:

Abrasive	Orifice	Pressure	Time per Piece	C. F. M. Free Air	H. P. Hours Per Piece
Flint Shot	¼"	100 lbs.	10¼ min.	148.40	5.59
Flint Shot	⅜"	60 lbs.	7 min.	121.50	2.49

Our Engineering Service has effected important economies for a number of America's leading sandblasters. Write for particulars.

TRY FLINT SHOT—In your own equipment.

Order as many 150-lb. bags as will be required for a thorough working test—to be shipped gratis—f. o. b. Ottawa, Illinois.

UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

PUBLISHED BY
THE ENAMELIST PUBLISHING COMPANY
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R. A. WEAVER, EDITOR
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VOLUME 4 NOVEMBER, 1926 NUMBER 2

Thinking

HERE'S an editorial by Bruce Barton, which we think is worth while printing for the benefit of our readers. Mr. Barton writes:

A friend of mine who is an authority on business organization was lunching with the president of a big tire company for whom he had just completed a survey.

"Well, what do you think of us?" asked the president, who obviously wanted to be told something pleasant.

"Before I answer that question I'll ask you one," my friend replied. "Suppose that tomorrow morning no mail was delivered at your office, no telegrams arrived, no 'phone calls were put through, no visitors admitted. Suppose, in other words, that every one of your executives came down to find his desk absolutely clear. How many of them would be able to keep busy through the day?"

The president thought for several minutes, running over his associates man by man. "I can think of four men who would qualify," he said, finally.

"That's about what I should have guessed," my friend continued. "You have more than five hundred people in your office. At least fifty of them are paid large salaries. Yet only four of the whole crowd are really capable of independent thinking. The other four hundred and ninety-six just go through the motions. They answer such letters as come in; pick up the receiver when the telephone rings; deal with people who call. Four hundred and ninety-six doers, and only four thinkers. That's the trouble with your company."

As to honesty, familiarity breeds respect.

Somebody told me a somewhat similar story about John D. Rockefeller. Going through the office in the early days, he found a new man who seemed to be buried under a mass of work. Mr. Rockefeller stopped.

"I don't like to see you so busy," he said.

The man was quite flabbergasted. He thought that was the way to make an impression on his boss, to be *very* busy.

"Find a man whom you can train to do your work," Mr. Rockefeller went on. "Find him just as quickly as possible. Then you put your feet on the desk and think up some way for the Standard Oil Company to make more money."

* * *

The Leonard Refrigerator Co., Grand Rapids, Mich., a Division of the Electrical Refrigeration Corporation, has entered upon a program of expansion, which will give this Division a production capacity of 500,000 units in 1927.

C. H. Leonard, founder of the business, received his first patent on a refrigerator in 1880. The first manufacturing operations were undertaken in a small building also occupied by the Bissell Carpet Sweeper Company. Some months ago the Leonard business was sold to the Electrical Refrigeration Corporation for $6,000,000.00.

* * *

The many friends of Joseph Buecker will be sorry to hear that he has been forced to give up his work with The Favorite Stove & Range Co., Piqua, Ohio, where he had charge of the enamel shop, and go West for his health.

* * *

T. G. Brown, Works Manager, Gurney Foundry Co., Ltd., writes- "I hope it isn't too late to congratulate the ENAMELIST on its third anniversary. I can assure you the copies we receive are carefully read, and I find them both instructive and interesting."

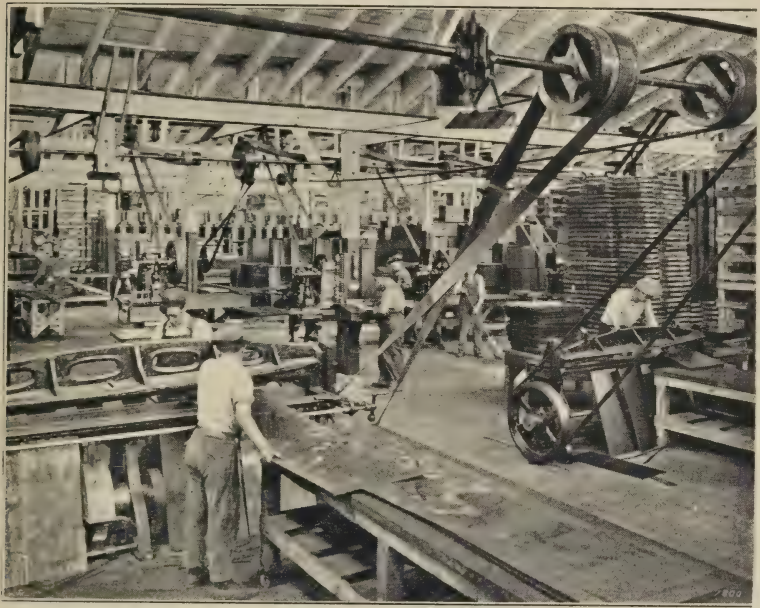
* * *

The American Radiator Company is building a new warehouse and office building in Cleveland, Ohio.

Some people speak from experience—others don't speak—also from experience.

Small Beginning Leads to Success

ONE man's ideal is to make a better stove than any one else makes. That man is George Hammer, president of the Hammer-Bray Co., Oakland, California. The stove, the Spark, is not only attractive in appearance but has features which render it attractive to every housewife.



Taken in the Hammer-Bray Plant—*Courtesy Coast Investor*

The success that has come to George Hammer is well deserved. He is still a young man, full of energy, pressing hard toward the realization of his ideal,—making a better stove than any one else.

The Hammer-Bray Co. was organized in San Francisco in 1902. After the fire it moved to Oakland, and made sheet metal stoves. In the beginning, some of the parts were purchased.

Best rounded life is a square one.

In 1912, the company was making all its own sheet metal parts. In 1916, a foundry was established, and from that began the really large development. The company always had good management, so the growth has been continuous. Since 1921, practically all the parts entering into the stoves' manufacture have been made at the plant.

The company has $100,000 invested in machinery, employs 150 men all the time, and has a unique history in that it has never had any labor troubles. Also the factory is regarded as one of the model plants around the bay, noted for cleanliness, orderliness and efficiency. The high character of the management is evident from the fact that all of the foremen and most of the employes have been with the company for ten years or more. Superintendent F. H. Gercich has been with the concern about twenty years.

Hammer-Bray Co. is offering $250,000 in 8 per cent preferred stock.

Over a period of ten years, the average annual sales show an increase of 24 per cent. A $300,000 life insurance policy is carried by the corporation on the life of the president of the company.

The purpose of the issue may be summarized as follows:

1. Expansion of the company's business demands additional working capital in order to operate efficiently and economically.

2. Increased warehouse space and show rooms, together with new equipment, are included in the development program.

3. Development of new fields and already partially covered territory requires certain capital expenditures which will quickly earn an adequate return on the investment.

The Hammer-Bray Co. is a Nevada corporation with authorized capital of $750,000 divided into 5000 shares of preferred stock, par value $100, and 12,500 shares of common stock of par value of $20 per share. The shares are non-assessable. Dividends of 8 per cent per annum on the preferred stock are payable quarterly. Dividends of $3 per share have been paid on the common stock for the last two years, which is the equivalent of 15 per cent per annum on the par value of $20.

If they want to keep the boys on the farms just pass a law prohibiting it.

Instructions for Hand-Graining

THE best results, in hand-graining mahogany enameled castings, can be obtained by using a graining paste consisting of one part black overglaze and two parts of clove oil. This gives a good consistency of paste to work with. The proportions of this mixture may be changed to suit different conditions of the color of the grain effect desired. That is, it may be made lighter or darker or of a different color tone by the addition of other colors of overglazes. The clove oil is not very expensive, considering it takes such a small amount of graining paste to do the actual graining. The clove oil may be obtained from any drug supply house, for about $1.50 a pint. The black overglaze sells for about $1.50 a pound, and may be obtained from any reliable chemical and oxide company.

For graining, a set of standard paint grainer's brushes are used. These may be obtained from any painters' supply house who carry a stock of brushes. One brush is used for applying the paste. Care should be taken not to have too much paste on the brush, as this would result in putting too heavy a coat on the ware to be grained, causing difficulty in graining and a resultant lack of gloss. After the paste is applied, it is then grained with a clean dry brush, which puts the grain effect on the piece.

The result will, of course, depend very much upon the skill of the operator. To make the graining effect appear more natural, blurs and streaks may be put on the piece with the aid of a sponge or rag. This will eliminate the severe uniformity of a continuous grain.

The graining paste, after being applied to the ware, does not have to be dry before being burned. It can be taken to the furnace immediately after the graining operation is done. The graining is burned in at the same temperature as the enamel, to which the graining is applied, and will require about the same length of time in the furnace, or perhaps a little less.

—*Contributed*

* * *

FOR SALE: Porcelain Enamel Formulas; all colors, for steel and iron. In Powder and Liquid form. Write Eugene Wuerz, 47 Melrose Ave., East Lansdown, Pa.

A bank messenger and his money are soon parted.

Dry Process Enameling

By A. L. Vodicka

DRY Process enameling, or the American Process, has been in commercial use nearly forty years. Before this, all cast iron was enameled by the wet process, using a hard white first coat and two white enamel cover coats. The dry process enamels used years ago were much harder then the enamels used today. Cornwallstone or Quartz furnishing silica contents, whereas, today, Feldspar is generally used. A bathtub had to be seived four times to get a perfect job, whereas, today, with a softer enamel, two seivings only are necessary. Competition and high priced labor have forced manufacturers to use softer enamels with which they can get a much larger production. A softer enamel looks as good, if not better, in appearance, than a hard enamel, having a much better gloss. It is much easier to work with as it causes less pinholing, runs smoother and covers defects easier. In addition the enameler does not have to be as careful in applying same on castings. It is not apt to chip, but will craze easier than a hard enamel and will not stand up against hard usage, especially where acids or weather conditions come in contact, resulting in loss of gloss and color.

Raw materials mostly used in dry process enamels are: Feldspar, Borax, Litharge, Soda Ash, Flourspar, Zinc Oxide, Carbonate of Barium, Nitrate of Soda and opacifiers such as Tin Oxide, Antimony or Zirconium Compounds. These materials are thoroughly mixed together and all lumps broken so that the enamel melts to a homegeneous glass. It is now put into the smelter and left in from one to three hours depending on the heat of your smelter, hardness of your batch, and size of your batch in comparison with size of your melting pot. On a large batch, in a furnace of small capacity, the enamel should be well stirred with a non-scaling iron hook; on smaller batches stirring is not necessary. About five or ten minutes after enamel ceases boiling it is tapped out into cold water to chill and break it into fine particles, or frit, which makes it easier to mill. An enamel not melted enough will cause pinholes, pits, and sometimes pink spots; an enamel melted too hard will be off color, and becomes brittle causing chipping. High Flourspar enamels lose their

---

It isn't what's going on in Flapperdom that matters—rather it's what's coming off!

opacity when melted too long. Antimony enamels vary in color if not melted evenly.

The frit is taken out of the water after water is drained off and put on a dryer which can be heated by the waste heat from smelter. The enamel put on a dryer is generally dry before the next batch is melted. The frit must be dry before putting into the mill, as a damp enamel will not mill up fine but will stay coarse and stick to sides of mill, so that it has to be hammered out. This enamel will run dirty and curdles after applied to casting. Most dry process enamelers add some opacifier at the mill. Where continuous mills are used, all opacifiers are added at the melt. The enamel is milled in porcelain ball mills from seven to twelve hours, into a fine powder to pass freely through a sixty mesh screen. This enamel is generally seived through a sixty mesh screen by a mechanical sifter to catch all unmilled pieces of frit, after which it is ready for use.

Castings must be thoroughly cleaned. Fresh castings of iron suitable for enameling only require a good sandblasting. Old castings, rusty, or oily require annealing or pickling, and sandblasting. A casting should be first coated shortly after sandblasting, or stored in a warm room, especially in damp weather which turns a sandblasted casting rusty in a very short time. A casting poorly sandblasted will blister and sometimes chip off. Castings that have been subject to damp weather after sandblasting, will chip sometimes, after being enameled, while still warm. Sometimes these castings will show blisters on first coat burning which is a good warning to stop as these nearly always chip off. Before first coating, castings are inspected, holes in iron are patched and iron scales chipped off. The first coating consists of a thin even coat, brushed, sprayed or dipped. If applied too heavy it causes pinholes and pits, and sometimes curdles when put into furnace; if too thin it will burn off easily. The first coated casting is put into a furnace, gas or oil fired, containing from 1650 to 1800 degrees fahrenheit and heated to a bright cherry red so that the ground coat is fused, and still has life or a gloss, which acts as a bond between the enamel and iron and also prevents the iron from oxidizing when heating. If underburnt on first coat it will cause pinholes

Delaware law against painting on Sunday will make an awful sight of the morning congregations.

and pits and sometimes chip on heavy parts. If overburnt it will blister and chip off.

The enamel is powdered on evenly using a forty to sixty mesh screen seive and then put into the furnace to melt. Small pieces require one seiving and large pieces two. When enamel is melted, a piece is drawn from furnace, inspected and if perfect, set down. If any defects appear such as pinholes, iron scales or blisters, they are patched, dusted up a bit, and put back into the furnace. If an enameled piece is overheated the enamel will run and blister. The enamel coating runs from one thirty-second to three thirty-seconds inches thick. On small castings a dipping process is used. Castings are first coated, put into furnace, and when properly heated they are dipped into powdered enamel. This enamel is so soft that the castings do not require reheating as the heat of the casting melts the enamel.

* * *

The Thomas White Co., Quincy, Ill., writes that they are retiring from business.

* * *

The teaching staff for the present year at Ohio State University is as follows: Arthur S. Watts, head of the department: china, porcelain and art ware; J. L. Carruthers; structural ware industries, and kiln, drier, and plant design; G. A. Bole: refractories and cement industries, and chemistry of silicates; S. R. Scholes: glass; T. M. Felton: metal enamel industry.

Each of these teachers is a specialist in his field and has a practical as well as a theoretical knowledge of his subjects.

* * *

The St. Louis District Enamelers Club opened their Fall sessions on September 28th, with a large number of members in attendance. A very fine paper was read, at this meeting, by Mr. Frank G. Jaeger, on the subject of Ground Coat Enameling.

Mr. E. S. Weil, of the G. S. Robins Chemical Co., read a very interesting paper on Fluorspar, illustrating with samples the various kinds of spars.

At the October meeting, held October 26th, a four-reel film, showing the process of making Armco-Ingot Iron, was featured, through the courtesy of the American Rolling Mill Co. A very interesting film was also shown on the mining of Fluorspar; the latter through the courtesy of Mr. Earl Brokenshire of the Oglebay, Norton Co., and the University of Illinois.

Three new members have been welcomed by the Club—Mr. E. R. Methudy, Mr. J. E. Methudy, and Mr. F. T. Courtaway, all of the Methudy Enamel Range Co., E. St. Louis, Illinois.

Citizen: A chap who forgets to register, can't vote, and complains about results.

Sheet Steel Enameling

The Importance of Proper Burning of Ground Coat

Too much attention can not be given the burning of ground coat ware, as the success of succeeding operations rest upon the proper burning of same.

Underburning or overburning can only result in poorly finished ware regardless of how carefully and well it may have been prepared, or what its future treatment may be.

The burning time and temperature will depend on the refractoriness of the enamel and the gauge of the material, but the enamel should be of such composition that it can be burned under 1600 degrees Fahrenheit, as steel is subject to warpage above this temperature.

Before firing the ware should be carefully examined to see that it has an even coating of enamel, which should be just heavy enough that the steel does not show through, is free from streaks and sags and any odd drips or lumps soomthed down.

The burning bars should be kept in good condition and for flat ware if spaced not more than 3¼ inch centers practically no warpage will result.

The temperature of the furnace should be fairly uniform throughout and ware of different gauges should be burned separately with flanges spaced at least 1½ to 2 inches apart, with lugs or heavy parts removed from one another as much as possible.

A few of the troubles caused by underburning, which are liable to show in the finish coats are crazing, blistering, fish scale, spongy effect, etc., while overburning results in pimples or copper heads, fish scale, etc.

To prevent pin-holes and black specks in finished ware the ground coat should be burned at a higher temperature than finished coats.

Ground coat enamel containing Cobalt when properly burned will be blue-black with a semi-gloss lustre, if underburned light blue, while overburned ware will be brownish-black.

W. C. C.

* * *

WANTED TO BUY: Copies of March and September 1926 issues of the ENAMELIST. Mail to Enamelist Publishing Co., Cleveland, Ohio.

Honor is hardest to find when it is lost.

Here's a Ball Team, that has a very enviable record. It is the Stanley Team, backed by the Stanley Insulating Company, of Great Barrington, Mass., and managed by Mr. Badger, the Superintendent of that company. This picture is particularly interesting to the enameling trade, because of the fact that the Stanley Insulating Company have a very fine Enameling Department, where they enamel parts for electric ranges, and also enamel the famous Stanley Vacuum Bottle.

You can recognize Mr. Badger, as he sits with his arms crossed in the first row. During the present season the team won 46 games and lost only 6, and we understand it played the best independent games in New England.

We would like to arrange with Harry Wolverton of the Kalamazoo Stove Co., to put his team against Mr. Badger's. It should make some battle.

* * *

The Alaska Refrigerator Company has become associated with the Coldak Corporation.

A raised face drops when it sees the bill.

Flights of Fancy

Some meditations from a mixing room

IF there is one thing more than another that should be drawn from the mixing room, it is that convenient, ever present, all inexcusable and indefinite "Jack-o-lantern" called Luck, that scapegoat for so many sins of omission and commission.

There may be such a thing as chance and luck in other vocations and professions, but there is none in enamel making.

Indeed here nothing should be left to chance, and where such a rule is insisted on there is not likely to be any luck whatsoever—least of all bad luck. Faults in enamel frit are faults of somebody's who has either improperly mixed or improperly melted the enamel. But if the materials used are as they should be, then, for a given enamel, certain results must follow certain causes, all definite and traceable.

Faults in enamels are always the result of lack of judgment, ignorance, carelessness, lack of proper precautions, or of not doing the right thing at the proper time. When there are faults in enamels somebody does not understand his business or someone has not attended to his duty.

Be cautious, be considerate, but don't be too conservative. "Try all things," hold fast to that, which upon fair trial is ascertained to be good.

Take not too much stock in old formulaes, neither reject them as being beneath contempt, they are well worn stepping stones on the Progress road.

Yet hold not fast to an old thing with the idea that there cannot be a better one, neither reject a thought or a thing because it is new.

Try all things for yourself. The old fellows were sometimes mistaken, the young fellows often are. Read and learn all about this Art or Trade that any or all in the past have known. Books are the repositories of knowledge. Go to them. Despise no source. Knowledge and Art are cosmopolitan.

Whosoever can teach you anything, let him find you a ready student. Catch on, profit by the teaching, exploit it. Remember that we are only of today, only wise in our generation. Mankind is the vehicle of all knowledge since the dawn of Time.

Lines of least resistance will never appear on a woman's face if she can help it.

No, the man on the left is not Douglas Fairbanks, and the man on the right is not Ben Turpin. In real life, the fine looking lad on the left is Chester Blackburn, of The Perfection Stove Co., formerly Cleveland Metal Products Co.

The little boy in the center is our Editor, and Harry Ebright completes the picture, which was taken at Bon Echo, Ontario, this Summer.

* * *

The Landon Radiator Co. has been incorporated at North Tonawanda, N. Y., by A. A. Landon, G. F. Rand and S. H. Knox.

* * *

The Industrial Enameling Spray Co. has engaged in business at 1634 Howard St., San Francisco, Calif.

* * *

S. P. Edson, formerly with the Bettinger Enamel Corp., is now with the Ingram-Richardson Manufacturing Corp., Bayonne, N. J.

Pugilists are not the only ones who have to fight for their money.

THE following are the present Spraying and Sand Blasting piece-work rates in an Ohio job enameling shop. They state that their average daily production on sandblasting is 5,201 pounds, and on spraying, 2,937 pounds.

SPRAYING

Ground Coat	25c per cwt.
White, 1st, 2nd and 3rd coat	25c per cwt.
White, 4th coat, if O. K.'d by foreman	10c per cwt.
(If not O. K.'d by foreman the sprayer will not be paid.)	
Colors, 1st coat	25c per cwt.
2nd coat	30c per cwt.
3rd coat, if O. K.'d by foreman	10c per cwt.
(If not O. K.'d by foreman the sprayer will not be paid.)	
Black, 1st coat	30c per cwt.
2nd coat, if O. K.'d by foreman	10c per cwt.
(If not O. K.'d by foreman the sprayer will not be paid).	
Walnut, 1st coat	30c per cwt.
2nd coat, if O. K.'d by foreman	10c per cwt.
(If not O. K.'d by foreman the sprayer will not be paid).	
Mahogany, 1st coat	30c per cwt.
2nd coat, if O. K.'d by foreman	10c per cwt.
(If not O. K.'d by foreman the sprayer will not be paid).	

SANDBLASTING

Operator	20c per cwt. Raw castings
Helper	13c per cwt. Raw castings
Operator	49c per cwt. Enameled castings
Helper	26c per cwt. Enameled castings

* * *

Mr. Paul Francais, well known among the enamelers, has become associated with the Chicago Vitreous Enamel Product Company.

* * *

The Evansville Enameling Co., Evansville, Indiana, at present operating four furnaces, is planning to install additional furnace and equipment within a short time. Julius Ritter is in charge of the Evansville plant.

* * *

GOOD ENAMELER wants position as night or day foreman. Wet and dry process experience. Write Box M, ENAMELIST.

"Hot air" won't benefit Europe's owe-zone.

Practical Chemical Control of Pickling Room Solutions

By B. T. Sweely

CHEMICAL control of the strengths of the solutions used for cleaning, pickling, and neutralizing in the enamel industry, is essential if the best results are to be obtained. The methods and data submitted below are the results of several years' experience, and have proven practical and economical.

It might be well to observe at the outset that extreme accuracy is not attained by these methods, but since a variation of from 1 to .5% in acid solutions has but little effect on the pickling process, we have found these methods sufficiently accurate to control shop operations, and so simple and rapid that the pickle room foreman can test his solutions twice a day with no loss of time or production.

The pickle room practice at our plant is, briefly, to pack the ware in monel baskets and put it through the successive steps of cleaning, rinsing, pickling, rinsing, and neutralizing. After neutralizing, the basket of ware is set on a car and passed through a tunnel drier, after which it is ready for the dipping operation. No hand labor is used beyond loading the ware into the baskets and unloading it after it leaves the drier.

The control of the strength of the solutions used in the cleaning, pickling, and neutralizing operations, is a simple problem to the chemist, but our purpose was to so simplify it as to make it easy for the shop man to keep his solutions under definite control.

In testing the strength of the solutions, we have used normal or fractionally normal solutions of acid and alkali. For testing the cleaning solutions, a normal sulphuric acid solution is used; for testing the acid bath, a half-normal sodium hydrate solution is used; and for testing the neutralizing baths, we are using a tenth-normal sulphuric acid solution. These solutions, of the strength desired, may be purchased from any drug or chemical supply house, or, of course, can be made up as required.

Methyl orange is used as an indicator, as it gives a fairly sharp end point even in the presence of ferrous hydrate or CO2 gas. This indicator is added to the standard solution when ready for use.

In determining the strength at which we wished to maintain the solutions, we neglected the actual weight of a cubic centimeter and assumed the per cent by weight of acid or alkali present was the grams per cc. shown by titration, *i.e.*, a normal NaOH solution containing .04008 gms. NaOH per cc. was considered a 4% solution. Obviously this method does not give per cent by weight of acid or alkali present, but the number of grams of acid or alkali present in each cc. of solution.

The strength of the baths we have found best suited to our solutions and working conditions are as follows:

Cleaning solution, 3-5 per cent. Acid solution (sulphuric), 3½-5 per cent. No. 1 neutralizing bath, .6-.8 per cent. No. 2 neutralizing bath, .15-.20 per cent.

Money is a small matter with most of us—very small, in fact.

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The Foundation of Business is Confidence —U. S. Chamber of Commerce, "Principles of Business Conduct"

BUSINESS has its code by which the worth of the individual firm is gauged. The vast army of consumers sits in judgment.

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Civilization is the product o vs

Having determined the approximate strengths at which we wished to maintain the various baths, we modified the usual method of titration to meet the requirements for shop use, by putting the indicator in the standard solution and using a cylinder graduated to fit the job.

In testing for acid strength, we have graduated a cylinder at 10 cc. and in divisions of two cubic centimeters, up to 28 cc. The N-2 NaOH solution, colored by the methyl orange indicator, is placed in a half-gallon bottle, tightly stoppered with a siphon and pinch cock attached. The operator fills the graduate to the 10 cc. mark with acid from the pickling tank, and runs in the half-normal alkali until the color changes, then reads the grams of acid present in each cc., or per cent as above, direct from the divisions on the cylinder.

Since each division above the 10 cc. mark is 2 cc., and we are using a half-normal alkali to neutralize 10 cc. of unknown H2SO4 solution, it follows that each division above the 10 cc. mark represents approximately one-half gram of acid present in the 10 cc. sample. If therefore, the 10 cc. sample consumes less than 6 divisions (12 cc.) of alkali, the pickling solution is too weak and more acid is added to the bath; if more than 10 divisions (20 cc.) of alkali are required to change color, the pickling solution is too strong and water is added to dilute the bath to the proper strength. Continued use of this test develops the judgment of the operator to the point where it is really surprising how accurately he will estimate the amount of acid or water required, as the case may be, to bring the strength of the bath within the limits fixed for his guidance.

The same procedure is used in testing our cleaning and neutralizing solutions, but a different scale of graduations is used. These cylinders are graduated at 10 cc. and the following divisions are marked at 2½ cc. up to 10 divisions. The change in the scale is necessitated by the difference in molecular weight of the acid and alkali, that of sulphuric acid being approximately 50, while that of sodium hydrate is about 40. Since we wish to read in terms of 1% or 1 gram per cc., it is obvious the graduation must be in the necessary multiple of the molecular weight.

The standard solution used for testing and cleaning solution is a normal H2SO4 solution with methyl orange indicator added, and placed in a stoppered bottle as described above. The 10 cc. sample is placed in the graduate and the normal acid run in until there is a distinct color change as before; if less than three divisions (7½ cc.) are required to change color, the bath is too weak and more cleaning compound is added; if more than 5 divisions (12½ cc.) are required, the bath is too strong and must be diluted.

The neutralizing baths are tested in exactly the same manner, except that an N-10 acid is used in order to secure greater accuracy, and to permit the use of the same cylinder as is used for the cleaning solution test. That is, since limits of alkalinity are from .15 grams to .20 grams NaOH per cc. for the last tank, and from .6 grams to .8 grams per cc. for the first tank, we are working with concentrations only one-tenth as great as are those used in the cleaning operation, and consequently use a standard solution of only one-tenth the strength.

In testing these solutions therefore, a sample of 10 cc. from the last tank is placed in the cylinder, and the N-10 acid run in until the color changes.

Paradoxically, women forgot how to make bread when they learned how to make "dough."

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Statistics prove that fifty per cent of the married people are women

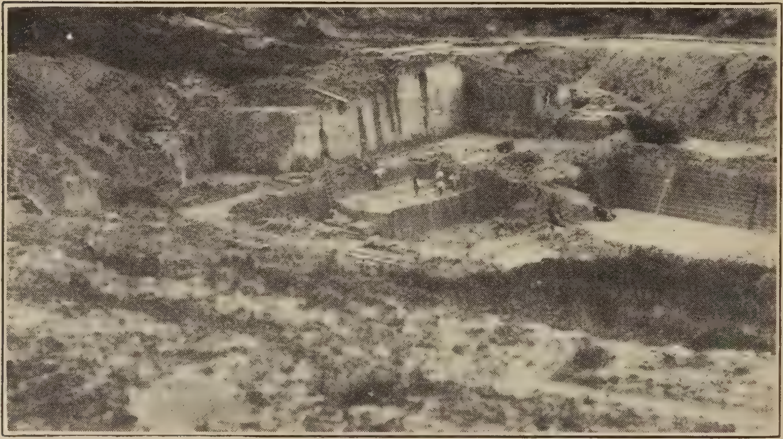
Should this require less than one division (2.5 cc.) the bath is too weak and more compound must be added; if more than two divisions are required (5 cc.) the bath is too strong and must be diluted.

Likewise for the first neutralizing tank a 10 cc. sample must consume at least 6 divisions (15 cc.) of the tenth-normal acid or the bath is too weak and if more than 8 divisions (20 cc). is necessary to change color the bath is too strong and must be diluted.

The above sums up what we have found to be a rapid and practical method of keeping our solution strengths under control. As stated at the outset, great accuracy is not secured nor is it necessary, as changes of 1 to 1½% in strength of the solution will be encountered daily, due to exhaustion by the work handled, but it has enabled us to keep the baths within limits that we have found will give us satisfactory results.

—*American Ceramic Society Journal*

* * *



You here see one of the Vallendar Clay Mines of the Koeller Co., Ohligs, Germany, with the men digging for "K" Brand Vallendar Clay. After the top ground is removed, they work their way down into the earth terrace by terrace. Much of their product is imported to the United States for use in enamel making.

* * *

POSITION WANTED. Trained and Experienced Enameler now located in East desires position as foreman or superintendent in plant with opportunities for advancement. Experienced on steel and iron. Write Box H, ENAMELIST.

Seems that modern youth has its daze at night.

A New Technique!
in
the Compounding of White Enamels for Sheet Steel

The Ceramic Research Department of the Metal & Thermit Corporation has developed an entirely new technique in the compounding of white enamels for sheet steel.

As a result of this research a very important advance, involving chemical and physical factors, has been made in the science of enamel making.

The use of expensive opacifiers is largely or entirely eliminated but the new process enamels have equal opacity, equal gloss and working properties, improved strength plus greater acid resistance, and can be made at a much lower cost.

Write for full particulars

Metal & Thermit Corporation

Ceramic Department

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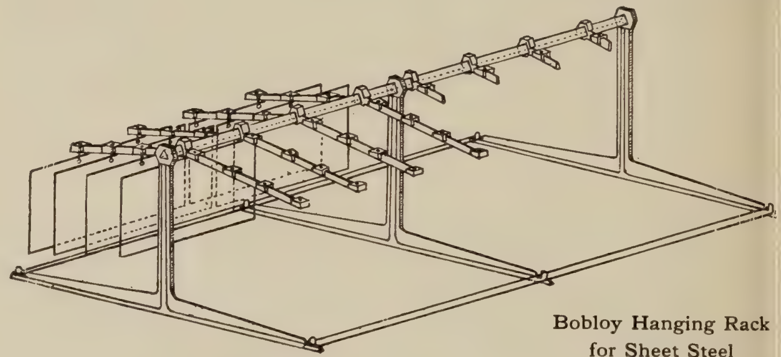
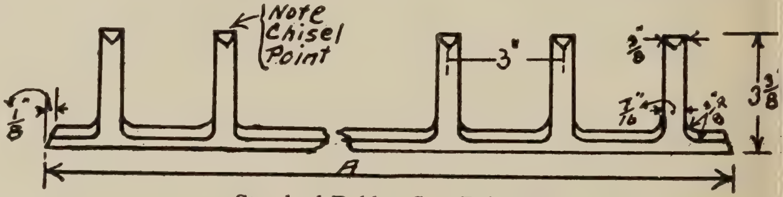


Bobloy Hanging Rack
for Sheet Steel

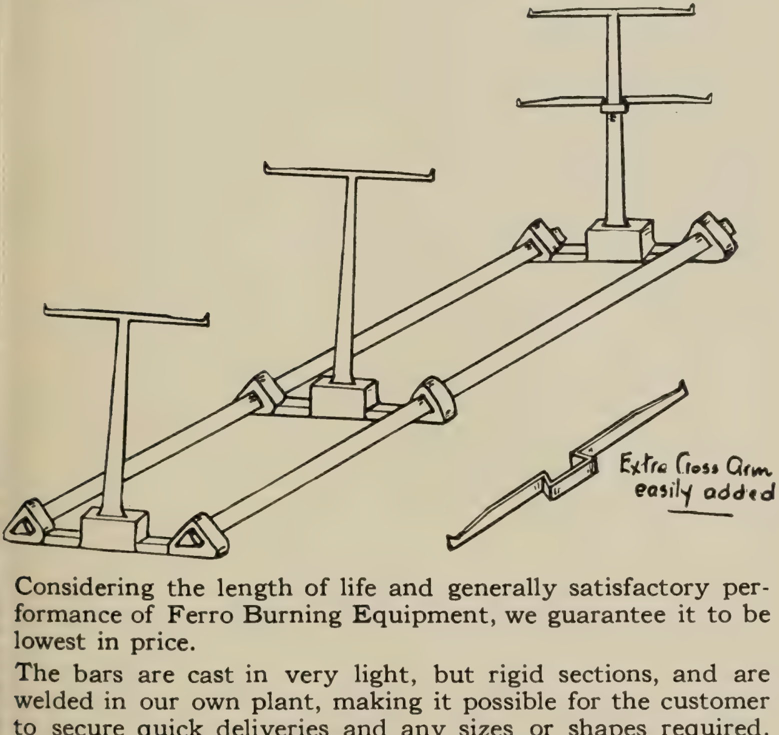


Standard Bobloy Cast Point Bar

The development of burning points and bars in the enamel industry has been interesting. We were the first from a production standpoint, to put on the market burning points, bars and racks, made from a successful heat-resisting alloy, and have produced more of these point bars than any other firm in the United States.

The Ferro Enamel Su

y" Burning Equipment
ling costs



Considering the length of life and generally satisfactory performance of Ferro Burning Equipment, we guarantee it to be lowest in price.

The bars are cast in very light, but rigid sections, and are welded in our own plant, making it possible for the customer to secure quick deliveries and any sizes or shapes required.

Above is illustrated some of our standard patterns.
Write us for complete booklet, showing full line of Bobloy cast metal shapes and Caloy rolled rod shapes

ly Company, Cleveland, Ohio

In the October ENAMELIST we ran an article entitled "Colored Enamels, An Elementary Analysis of Light and Color," and we are showing here a picture of the author, R. H. Williams, of Sydney, Australia.

When sending us the article, Mr. Williams wrote that he had learned these rules of color theory many years ago at the Battersea Polytechnic School, in London, and that during his career as an enameler he had found them very helpful.

"Flights of Fancy," in this issue, is another article by Mr. Williams.

* * *

The Ohio Ceramic Industries Ass'n. held its Fall Meeting in Columbus on November 12th and 13th. An extensive program of work was outlined. Governor Donahey and Mr. O. H. Sebring were among the speakers.

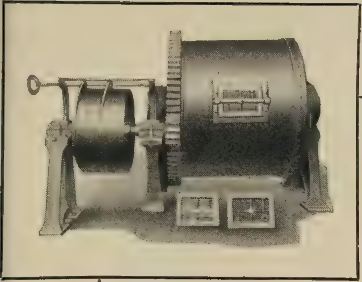
* * *

Harry W. Alexander, well known in the electrical industry, has been appointed general manager, Refrigerator Division of The Lamson Company, Syracuse, New York.

* * *

"The Benjamin Reflector," is the name of a very interesting house organ published by the Benjamin Electric Co., of Chicago, Illinois.

Strange as it may seem, idle rumors are usually very active.



Patterson Pebble Mills

A Size for Every Need

Mill	Pounds	Space	Code
2′6 x 3′6	250	4′7″ x 7′1″	Main
3 x 4	500	4′11″ x 7′9″	Maintain
3′6 x 4	700	5′6″ x 8′0″	Maintainer
4 x 5	1000	6′4″ x 9′3″	Maintenance
4′6 x 4′6	1200	6′9″ x 8′9″	Mainteret
5 x 4	1500	7′6″ x 8′9″	Maintenerra
6 x 5	2000	9′5″ x 10′8″	Marine

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THE PICTURE TELLS THE STORY

Harry E. Ebright recently took a fishing trip to Canada, and this is his first day's catch. Forty pounds.

Incidentally, he was aided, abetted and inspired by Chester Blackburn, of the Perfection Stove Co. (formerly Cleveland Metal Products Co.)

* * *

The New York Times, in connection with its Seventy-fifth Anniversary has prepared a list of firms, or the immediate successors of such, in existence at least 75 years. The stove and enameling industry are represented in this list by: Central Stamping Co., Newark, N. J., Lalance & Grosjean Mfg. Co., New York, Emerson-Brantingham Co., Rockford, Ill., Bridge & Beach Mfg. St. Louis, The Buck's Stove & Range Co., St. Louis, Charter Oak Stove & Range Co., St. Louis, Home Stove Company and Indiana Stove Company, Indianapolis, Ind., D. Eddy & Sons, New York, The Thatcher Co., Newark, N. J., Jewett & Co., Buffalo, Monitor Furnace Co., Cincinnati, Ohio, Estate Stove Co., Hamilton, Ohio, and the Gurney Foundry Co., Ltd., of Montreal, Canada.

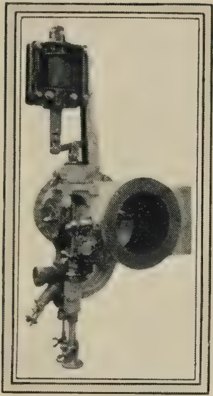
* * *

Shirly S. French, formerly Vice-President and General Manager of the General Fireproofing Company of Youngstown, Ohio, has been appointed President of the Berger Division of the Central Alloy Steel Corporation of Canton, Ohio.

* * *

We understand that Messrs. Gus and Albert Oeslerle are no longer with the Belleville Enameling & Stamping Co., at Belleville, Ill.

If those accepted are a criterion, the absolute degree in absurdity must be a rejected movie scenario.



What Does the Ryan System of Combustion and Temperature Control Save?

"We don't know because we couldn't operate without it."

(Statement from a letter received from a Ryan Control user)

"Our operation is such that it would be impossible to operate without automatic control, therefore it is difficult to say that the valve has benefited the operation as the operation would not be possible without it. It would be entirely out of the question to use hand control."

Industry—Chemistry—Metallurgy, within the short space of two years, have been able to produce new and valuable products because of the availability of the Ryan system of controlling combustion and temperature accurately in oil and gas fired heating equipment. While the Ryan organization is gratified to have so served this particular industry, even greater is the pride in the fact that—

Hupp, Delco Light, U. S. Pipe, National Pipe, Michigan Copper, Hudson Motors, Acme Products, Hess Bright Bearing, Wallace Barnes and a long list of industrial leaders have found that the Ryan system of Combustion and Temperature Control has solved many of their age old problems in reducing fuel cost, eliminating the variables of manual adjustments and accurately guaranteeing continuous like operations.

IMPORTANT: The Ryan Control System operates with any type of oil or gas burner or furnace. Specify its use. There is only one control system—and it's a Ryan product.

A complete bulletin will be sent upon request.

F. J. Ryan & Company

Wissahickon and Yelland Sts.
PHILADELPHIA

Twelve branch offices located at strategic positions throughout the United States.

RYAN

INDUSTRIAL HEATING EQUIPMENT

Blue is a wonderful color but a terrible feeling.

Recently Mr. C. F. Jaques, whom we are picturing here, was appointed Sales Manager of the Acorn Division of the Standard Gas Equipment Corporation.

Mr. Jaques has been in the stove business nearly forty years, and is thoroughly acquainted with the business. He was formerly connected with the Rathbone Sard & Co., before it became merged with the Standard Gas Equipment Corp., and for nine years represented them as their Pacific Coast Manager.

We are sure that the stove industry and the enamel industry will wish Mr. Jaques the greatest of success in his new work.

~~~

Many of our readers are interested in the stove and furnace business so will be interested in the new financing of the Holland Furnace Company. This company manufactures, sells and installs its furnaces, operating more than 500 factory branches. Net sales have increased from $1,632,971.00 in 1917, to $13,344,721 in 1925. They have net tangible assets of $10,081,196. During the five years ended December 31, 1925, credit losses were less than ¼ of 1 per cent of net sales. Earnings averaged $1,425,427 per year. The present financing consists of the sale of $3,500,000 six per cent debentures at par.

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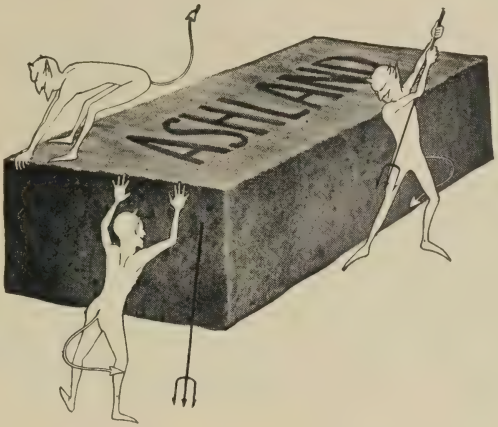
We are indebted to Mr. J. C. Hyatt, Advertising Manager of American Farming Publishing Co., for the photograph used on this month's cover.

Many of us are like the letter B—often in debt when there's really no need of it.



Don't Blame Conditions
It May Be Your Fire Brick

Many enamelists have found the solution to premature lining failure and excessive maintenance costs in super-refractory Ashland Ashfrax—a tough, strong, diaspore brick containing 60% of alumina.

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND, KENTUCKY.

Sales and Service Offices

New York
Cleveland
Chicago
Indianapolis
Detroit
Havana, Cuba

WILLIS H. PELLETIER

HE studied two years at Franklin Institute, studying Chemistry only. Was employed by Dr. Duval D'Adrian, Washington, Pa., doing analytical work on glass, and later research work on glass, enamels and oxides.

Was then employed by Illinois Glass Co., at Alton, and then by the A. L. Duval D'Adrian Chemical Co., Alton, as superintendent of making glass chemicals, oxides, etc.

Finally entered employ of the Ferro Enameling Co. of Cleveland, where he has been doing important research on enamels for the past two years.

* * *

Control of an important iceless refrigeration company recently shifted from Detroit to Cleveland, when Sentator James Couzens sold the Couzens Iceless Machine Company to a Cleveland Syndicate, heated by Edward L. Frantz of the Apex Electrical Company.

We understand that Senator Couzens disposed of this company because he did not believe in the time payment system of selling, and found out that he could not install his outfits on any other basis.

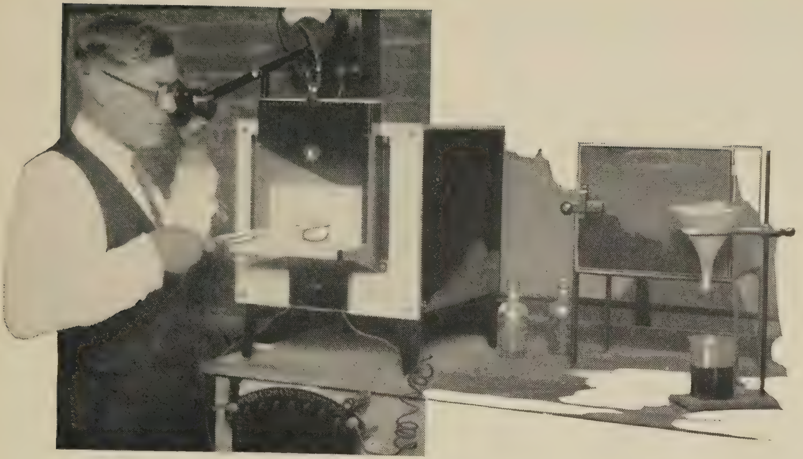
This is the machine formerly manufactured at Wapakoneta, Ohio, and is one of the oldest machines on the market, having been built since 1909.

The Cleveland interests have not yet announced their plans for the development of this business.

* * *

Three Ferro Floor-type forks are being installed in the enameling plant of the Detroit Stove Works, Detroit, Michigan.

Now Europe will probably always think of us as dough boys.



Control of Raw Materials

Silicate enamel compositions are "sensitive"—and must be closely watched for uniformity of the raw materials.

For this purpose, the Glascote Company of Cleveland, use a Hoskins Laboratory Furnace, Type FD-203. The service is severe because the temperature runs between 1860-1900° F. But no renewal of the CHROMEL heating unit has been needed after a year's operation. Mr. M. W. Butler, Assistant General Manager, says he knows of no heating unit that equals CHROMEL.

One of these furnaces would be useful in your laboratory. We'll be pleased to have you ask for Catalog 51-E.

Hoskins Electric Furnaces

Originators and Manufacturers of Chromel The Alloy that made Electric Heat Possible

Hoskins Manufacturing Company
4430 Lawton Avenue
Detroit, Mich.

Porcelain Enamel Digest

The Editor is indebted to R. V. Polen, of the Delco Light Company at Dayton, for the following thought. It is as follows:

> "*My value to my company is governed entirely by the amount of supervision, which I require.*"

If you will take time to think this sentence over carefully you will see that it is practically a business philosophy in itself. We all know how much worry and care is caused by those employees, who are not responsible, and who must constantly be checked on every piece of work.

Also how rare, and yet how valuable is the occasional employee who goes steadily ahead, doing each job carefully and without the necessity of supervision.

The short sentence given above is a good rule by which any person can arrive at a fair value of his own services.

* * *

The Enterprise Foundry Co., Sackville, N. B., is installing a new porcelain enameling plant. Mr. J. L. Fisher, we understand, will be in charge of the plant.

* * *

"High Temperature Insulation," a booklet on heat losses, has recently been issued by the Celite Products Company, and a copy may be obtained, gratis, by writing them, at 1320 S. Hope St., Los Angeles, Calif.

* * *

The other day we received a very delightful letter from Mr. B. F. Drakenfeld, Jr., of the B. F. Drakenfeld & Co., Inc., which reads as follows: "We received yesterday a copy of the October issue of the ENAMELIST, and I took this Anniversary Number up town with me in the evening in order to have plenty of time in which to read it.

The ENAMELIST is one of the very few trade publications which I seem to be able to get around to reading regularly, and I notice that my old friend, Mr. G. Harry Frank, of the Meyercord Company, wrote you to the same effect. I sincerely congratulate you on the consistently high caliber of the contents of the ENAMELIST."

Riches are no menace if we do not divorce dollars from sense.

ENAMELERS who use ARMCO Ingot Iron get more than a purer, uniform, virtually gas-free sheet. They get results—the yardstick by which the finished product is always measured.

The American Rolling Mill Co.

Middletown, Ohio

Export: The ARMCO International Corp.
Cable Address ARMCO, Middletown

ARMCO TRADE MARK **INGOT IRON**
The Purest Iron Made

A WELL KNOWN TANK MANUFACTURER GIVES THE FOLLOWING INFORMATION

FOR acid pickling tanks, it has been found, both from Laboratory experiments and practical experience, that small tanks are best if made from Cypress; Larger tanks, i.e., where material thicker than 4'' is required, should be made from special pitchy Long Leaf Yellow Pine, having no sap on the inside of the tank. Monel Metal or other acid-resisting bronze rods are usually employed for securing such tanks and in some cases the tanks are lined with chemically pure lead, burnt in, sheet Monel or Alcumite metal with welded seams, etc., and sometimes rubber lining is resorted to.

For cleaner, neutralizer and hot and cold water tanks, it is not usually necessary to use acid-resisting rods, except perhaps the tank next to the acid tank, which may be subject to acid, caused by dripping in transferring material. In such cases acid-resisting rods are preferable. These tanks are usually not lined with lead, etc.

Tanks which would be most suitable for enameling plant use probably would be best made from 3'', or preferably 4'' Cypress with acid-resisting rods. The lining of these tanks with lead or acid-resisting sheet metal will depend upon conditions prevailing; if any muriatic acid or salt is present in the pickle solution, lead will not do—neither will Monel Metal or Alcumite metal. Rubber lining will not withstand high temperatures or exceedingly rough treatment.

As already stated, large tanks should be made from special Long Leaf Yellow Pine.

Although Monel or Alcumite sheet metal is highly resistant to Sulphuric acid, still the welded seams, in due time, usually give trouble and it is often a question whether or not the additional expense involved is justifiable. These points must be determined in each individual case.

* * *

The most thorough experiments ever conducted to produce petroleum chemically will be made shortly under an endowment established by John D. Rockefeller, and now amounting to $500,000 dollars, the American Petroleum Institute announced recently.

The experiments will consist of reproducing as nearly as possible the geological conditions believed responsible for the production of petroleum.

Petroleum, in the belief of most geologists, the institute says, is produced by geologic forces acting through long periods on the debris of buried aquatic organisms. The proposed plan is based on this assumption and by the use of great pressures and varying temperatures the scientists hope to hasten the natural process.

* * *

E. A. Graham, of the Servel Corporation, left New York recently, on the S. S. Southern Cross, to spend several months in South American countries, investigating the electric refrigeration market.

Nation has been dried and found wanting.

B. F. Drakenfeld & Co., Inc.

Established 1869

IMPORTERS AND MANUFACTURERS OF

ENAMELERS' CHEMICALS

Antimony Oxide

Codmium Sulphides

Chrome Oxides

Cobalt Oxide

Copper Oxides

Manganese Dioxides

Nickel Oxides

Nickel Salts

Tin Oxide, White

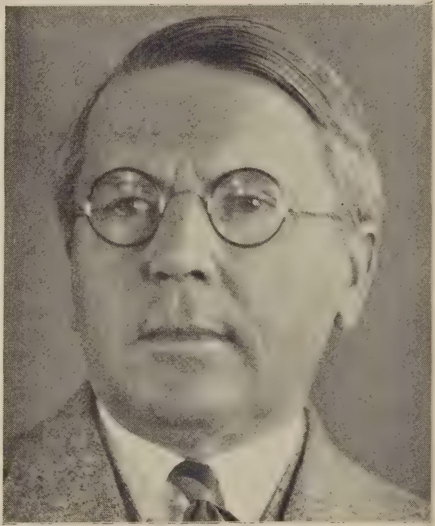
Main Office: 50 Murray St. New York

Excess of law expounds, impounds, propounds and then finally confounds!

J. Robert Crouse, is President of the Nizer Corp., with headquarters in Detroit. He is also founder and a life member of the Society for Electrical Development, and is the Sponsoring Director of the Electrical Refrigeration Program.

Mr. Crouse's work in promoting the organization of the Electrical Refrigeration Council was publicly recognized a short while ago at a Dinner given by the Sponsoring Committee of the Jas. H. McGraw Award, which provides for an award yearly for the outstanding contribution to the industry in the field of co-operation.

Mr. Crouse was presented with the Medal for Co-operation, he being the first to receive this honor.



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S. Weister, formerly with the Ironton Stove & Range Co., and who is well known to all the enamelers, makes the following suggestion: "A recent issue of the ENAMELIST carries an item which proves, or rather intensifies my arguments about trouble throughout all stages of enameling with atmospheric water. I would certainly appreciate it if some of the other enamelers would send in to the ENAMELIST some discussions on this matter." We're willing to give a prize of ten dollars for the best story received.

~~~
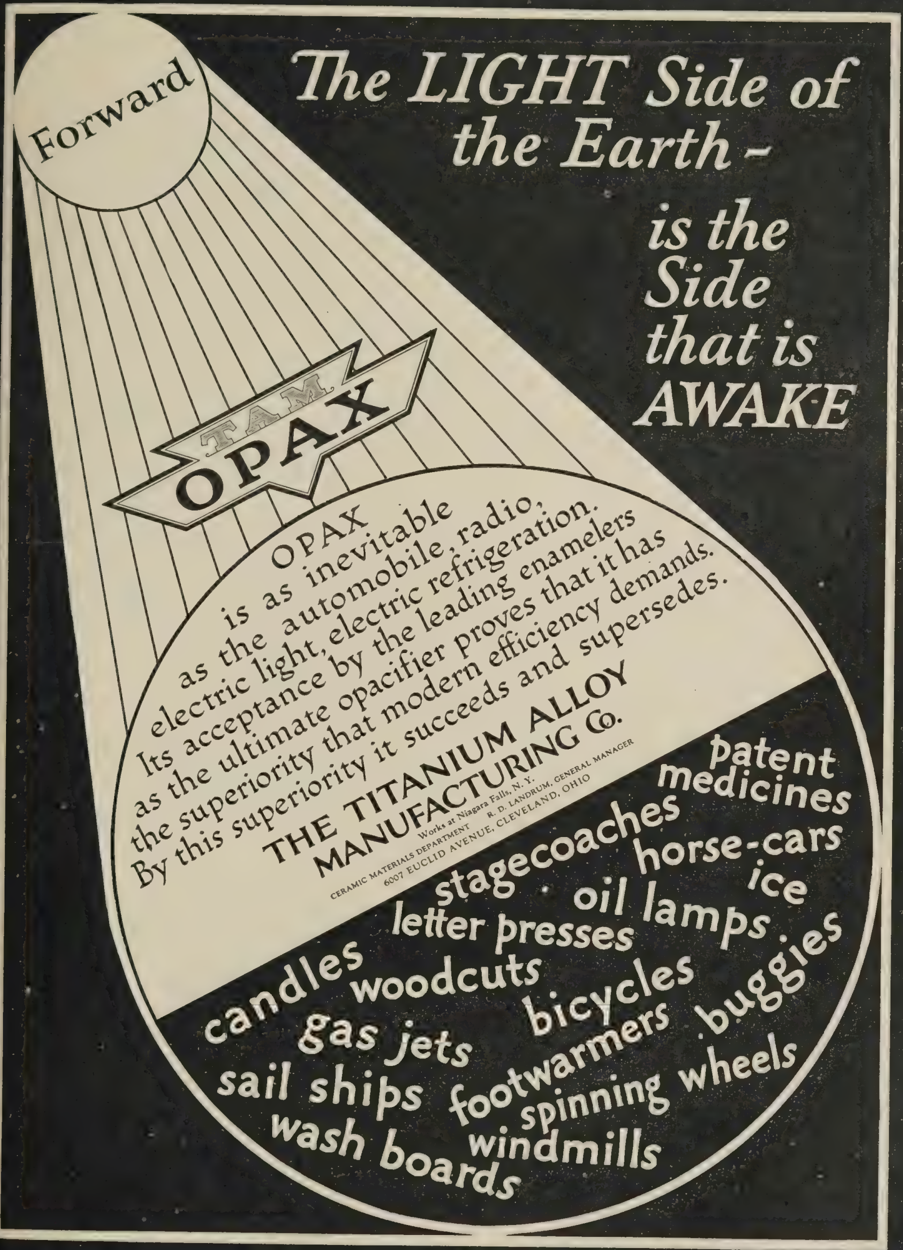

The General Electric Company, last month, paid to the workers of its local plant, $14,340.58 in supplementary compensation for such employes who have been with it for five years or more. The sum represents five per cent of the earnings of the employes for the six months' period ending June 30. The total paid by the company to its employes in all its plants amounted to $1,396,000. It was paid either in cash or in GE Employes Securities Corporation bonds, the latter bearing interest at eight per cent so long as the employe remains with the company.

Girl marries traffic cop who once gave her a bawling out. Now it's her turn.



Forward

The LIGHT Side of the Earth – is the Side that is AWAKE

TAM OPAX

OPAX is as inevitable as the automobile, radio, electric light, electric refrigeration. Its acceptance by the leading enamelers as the ultimate opacifier proves that it has the superiority that modern efficiency demands. By this superiority it succeeds and supersedes.

THE TITANIUM ALLOY MANUFACTURING Co.

Works at Niagara Falls, N.Y.
CERAMIC MATERIALS DEPARTMENT R. D. LANDRUM, GENERAL MANAGER
6007 EUCLID AVENUE, CLEVELAND, OHIO

patent medicines
stagecoaches
horse-cars
ice
oil lamps
letter presses
candles
woodcuts
bicycles
buggies
gas jets
footwarmers
sail ships
spinning wheels
windmills
wash boards

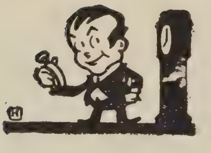
Bits of Frit

A FINE JOB

He: "Yes, once I loved a girl and she made a fool of me."
She: (trifle bored): "My—what a lasting impression some girls make."
—*Medley.*

HAD HEAD START

Reggie: "I'm thinking of going into the hollow-ware business, Miss Sharpe."
Miss S: "You should have a good head for such work—".
—*Wall St. Journal.*



FOXY HUSBAND

Wife: "Didn't I hear the clock strike two as you came in last night?"

Other half: "You did. It started to strike eleven and then I stopped it so's not to waken you."
—*Capper's Weekly.*

* * *

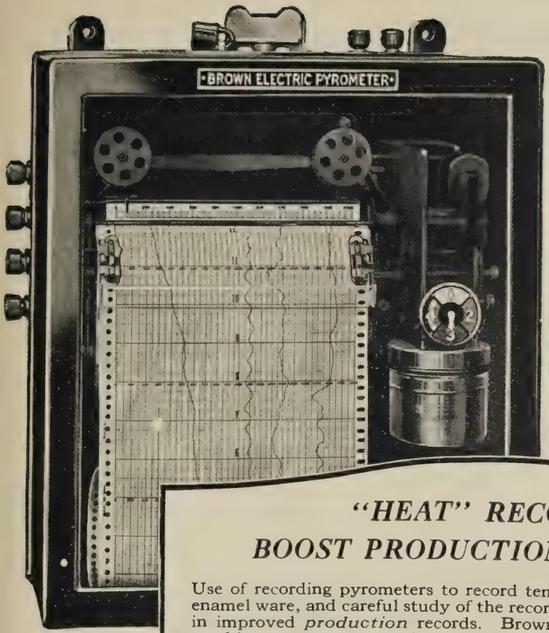
"Show me where I can find two men of iron!" shouted the orator.

"There's a chink laundry around the corner," piped up a voice in the front row.

AND CORNA POP

"Abie, you shirt tail iss out."
"Out? Vere iss it out?"
"Out vere the vest begins."—*Orange Owl.*

If the furniture is brightly colored and the pictures are freakish it's a tearoom instead of a restaurant.



"HEAT" RECORDS
BOOST PRODUCTION RECORDS

Use of recording pyrometers to record temperatures on every heat of enamel ware, and careful study of the records produced, quickly results in improved *production* records. Brown "New Design" Recorders combine accuracy, ruggedness, convenience—make 1 to 12 records. Automatic controlling models if desired.

Get Catalog No. 15

THE BROWN INSTRUMENT CO.
4595 Wayne Avenue, Philadelphia, Pa., U. S. A.

District Offices: Located at New York, Boston, Pittsburgh, Columbus, Cleveland, Detroit, Chicago, Indianapolis, Birmingham, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City, or Montreal.

Brown *Recording*
Pyrometers

To Measure is to Economize

Ruth: "Do you still run around with that little blonde?"
Ted: "She's married now."
Ruth: "Answer my question!"—*Lehigh Burr.*

* * *

Wash Jackson, who had asked for a day off to bury his wife, was back a fortnight later and asked for another day off.

"What for this time?" asked the boss.

"Ah's gettin' married, boss."

"Married?" And only two weeks after your wife's funeral?"

"Yassuh, boss. Ah don't hold spite long."

* * *

LIVELY LADY

"Is your sister still in Atlanta?"

"Say, that girl ain't still anywhere."—*Ga. Tech. Yellow Jacket.*

* * *

Mrs. Jones: "I met Mrs. MacDougal down the street and she told me that you told her the news I told you not to tell because Mrs. Brown made me promise not to tell it before she would tell it to me."

Mrs. Smith: "Why, Mrs. MacDougal told me she wouldn't tell a soul that I had told her!"

Mrs. Jones: "Never mind. I told her that I wouldn't tell you that she had told me that you told her."

* * *

Bride: "I don't think I'll make a cake by Mrs. Jenkin's recipe. It takes too many eggs."

Hubby: "How many?"

Bride: "Eighteen; the yolks of nine, and the whites of nine."

* * *

Speaking of lazy people, a story is afloat about a girl who was so lazy she put popcorn in the pancakes so she wouldn't have to turn them over.

One way to be different is to pay cash.

GOHI
TRADE MARK
REG U S PAT OFF

It Enamels Better!

GOHI (Genuine Open Hearth Iron) is sound and as free from impurities as it can be made. The surface is clean and free from scale, grease and dirt so that it requires a minimum amount of pickling. GOHI retains its original flatness in all enameling operations.

It is iron from which the impurities have been practically eliminated and the most rigid inspection at every step insures a uniform product.

The most skillful enameler using the best of enamels can secure the best results only when the enameling base is right.

GOHI IS MADE TO MEET THE MOST EXACTING REQUIREMENTS.

The Newport Rolling Mill Company
Newport, Kentucky

PAGING MR. GRANGE

Coach: "And didja carry ice like I told ya, last summer?"
Candidate: "No, I gotta better job selling electric refrigerators."

* * *

Grogg: What do you think of Betty?
Nogg: She looks to me like a safe pet.

* * *

Two Irishmen, one accompanied by his wife, met on the street. Said Pat to Mike: "Let me present my wife to ye."

"No, thank ye," replied Mike. "Oi got one of me own."

* * *

Sunday-school Teacher: "Who commanded the sun to stand still?"
Archie: "Mussolini."

* * *

DON'T WORRY

Don't worry if your job is small,
And your rewards are few.
Remember that the mighty oak
Was once a nut like you.

—*Sample Case.*

* * *

FINDING A COP

An excited man rushed out of a bank. "Bandits! A hold-up! Police!" he shouted—but not a single policeman was in sight.

A pedestrian ran north to find a policeman.

A messenger boy on a bicycle dashed south to find a policeman.

A driver of a delivery truck sped east to find a policeman.

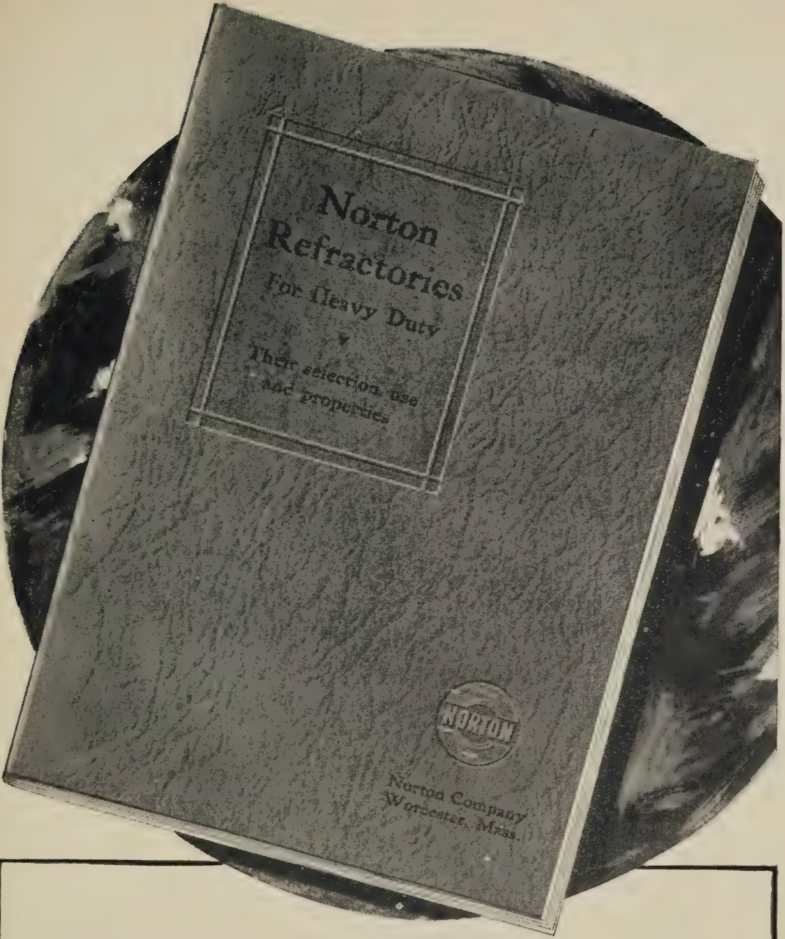
A lady in a Buick went west to find a policeman.

A man in a Ford muttered: "Fools! I'll get half a dozen policemen!" and he parked his car beside a hydrant.

As if by magic six policemen appeared.

While he explained, the bandits got away.—*Ziffs.*

Constant improvement of the auto can't furnish it with horse sense.


Norton Refractories For Heavy Duty
Their selection, use and properties
NORTON
Norton Company Worcester, Mass.

THIS 40-page booklet tells what refractories are and how to choose the right material for different applications.

NORTON COMPANY
Worcester, Mass.

Please send a copy of your booklet "Norton Refractories for Heavy Duty".

Name..

Street..

City

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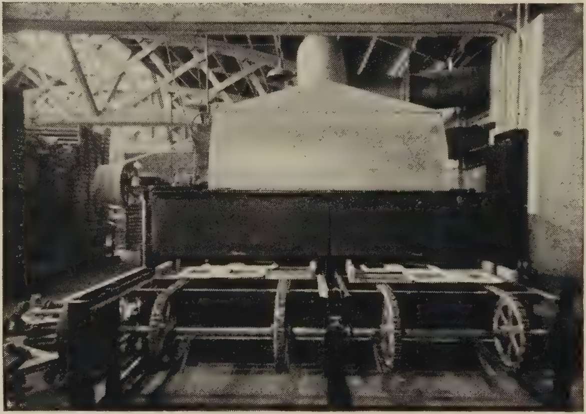
Write for a copy if you are interested in enameling muffles.

The "HURRICANE" Dryer For Enameled Ware is a *Continuous* Producer



"Hurricane" Dryer for Enameled Ware

An outstanding feature of the "HURRICANE" Continous Dryer for Enameled Ware is its simple, rugged construction—that assures continuous production day in and day out, without interruption for adjustments or repairs. All fans or blowers are equipped with outside bearings, while conveyor and conveyor drive are capable of carrying tremendous overloads.

The Philadelphia Drying Machinery Co.

Stokley Street above Westmoreland **Philadelphia, Pa.**

Canadian Agents:
Ross Whitehead & Co., Ltd.
Montreal.

HURRICANE
Ideal Drying Every Day

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.

Rosiclare Fluorspar

Enameler's Ground Fluorspar

Shipped from Domestic Source
Rosiclare, Hardin County, Illinois, U. S. A.

Largest producer of Ground Fluorspar
in the United States

Guaranteed Analysis
COLOR – Pure White

Carloads—Less than carloads
Packed in bags or barrels

Write us about your requirements

OGLEBAY, NORTON & CO., Agt.

Operating and Sales Agents for
Rosiclare Lead & Fluorspar Mining Co.
HANNA BUILDING, CLEVELAND, OHIO

PHENOMENAL

is the only word that properly expresses the increase in the use of

FERRO ENAMELS

Almost every month a new record is created. In October shipments were 47% greater than in any previous month.

There is a reason which easily explains the popularity of

FERRO ENAMELS

Won't you give us a chance to explain this to you?

Our Book "Men and Methods" gives some of the reasons. May we send you a free copy?

"Buy from Bob"

The Ferro Enameling Company

Cleveland, Ohio

Ceramics
EN

The Enamelist

A PERIODICAL FOR THE PORCELAIN ENAMEL INDUSTRY

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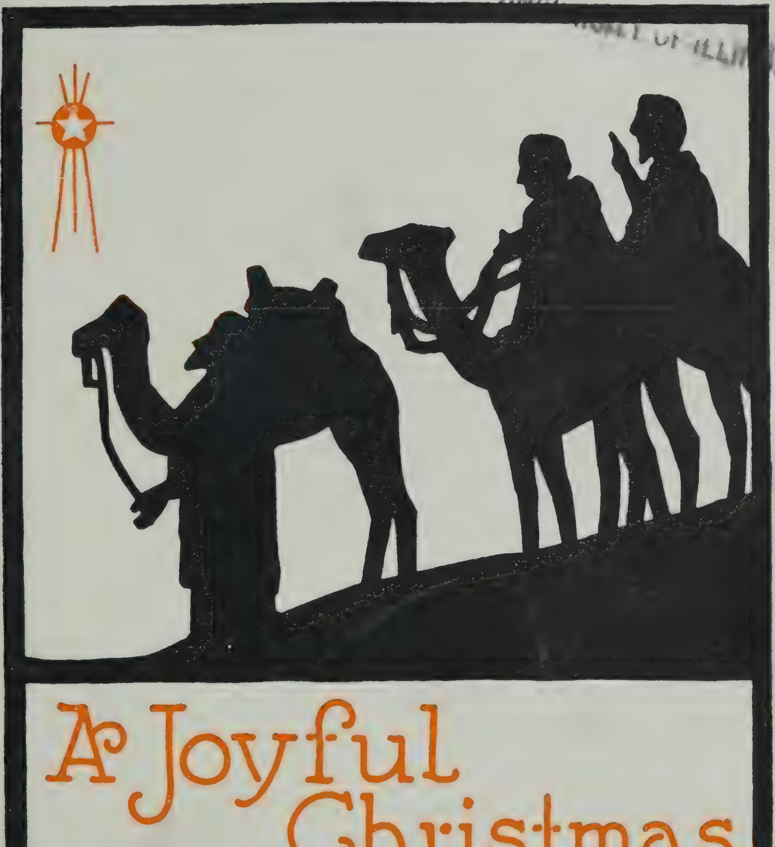

DECEMBER, NINETEEN-HUNDRED-TWENTY-SIX

The indirect but emphatic saving provided by the longer life and repair-free service of Ashland fire brick of Kentucky flint clays increases its value out of all proportion to the cost. To avoid excessive expense, premature failure and loss of production time use Ashland—the fire brick that lasts.

ASHLAND
FIRE BRICK CO.
Incorporated *1886*
ASHLAND. KENTUCKY.

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The ENAMELIST

A Trade Paper for the Porcelain Enamel Industry

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R. A. WEAVER, EDITOR

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VOLUME 4 DECEMBER, 1926 NUMBER 3

A New Years Resolution To Make

DETROIT will be the center of activity for enamelers during the week of February fourteenth to twenty-first, 1927—the date of the Annual Convention of the American Ceramic Society.

We are filled with enthusiasm about this Meeting, as we beileve it will be the biggest ever held. Interesting papers, discussions and visits have been planned. Also an unusually interesting exhibit.

We are fortunate in having the Society pick a convention point which is a center of interest to the Enameling Division, as well as the other Divisions. In Detroit there are several fine plants to be inspected, and close at hand is Buffalo, where many of the members will want to stop, to visit the American Radiator plant. There are also fine enameling plants at Cleveland, Mansfield, Ohio, Kalamazoo and Battle Creek, Michigan, worth while seeing.

Every member should resolve now to attend this Convention. We are sure you will be repaid in a wealth of inspiration and ideas for a big year during 1927.

As an added attraction, we are pleased to announce that the ANNUAL ENAMELIST DINNER, in connection with the Convention, will be held on Monday evening, February 14th. You are cordially invited, and a formal invitation telling you the time and the place will be mailed to you soon. Remembering the success of our previous Dinners, our slogan for this year is "Bigger and Better than Ever."

The Convention headquarters will be in the new Book-Cadillac Hotel in Detroit.

Having faith in my fellow man I judge him not.

Enameling in South America

By R. J. Ausfahl

"Ferrum Industria Argentine de Metales, S. A."

THE manufacturer of vitreous enameled products in the several countries of South America and particularly in the Argentine Republic is probably confronted with difficulties not experienced in any other civilized country in the world.

Contrary to the general belief, which seems to prevail in the United States and Europe the Argentine is not rich in natural resources. Aside from the fact that she has an abundance of very fertile land she is almost destitute.

View of Harbor, Rio de Janeiro, South America

The development of the oil fields (of which the Argentine is reputed to have many) has not yet reached a stage where crude oil can be produced as cheaply as imported. Mexico furnishes the larger portion of this fuel.

Coal is practically all imported from England and, during the recent English coal strike, from the United States. Its price delivered will run about $14.00 gold for a long ton of bituminous.

Walking is an exercise available to all ages.

The country has some timber but it is of such a nature as to be of very little use for making crates or shipping boxes. Lumber of this nature is all imported from the United States.

The writer knows of no article used in the enameling industry which is not imported with the possible exception of acids. Even a packing box may represent three countries, lumber from the United States, nails from Germany, and steel building strips from England. Railroads will not accept corrugated paper boxes for shipment, and they are not used.

Deliveries, even on cable orders, cannot be expected before the elapse of some two to two and one-half months which fact alone necessitates carrying much larger stocks of all materials than is usually considered necessary in either the United States or Europe.

Skilled labor receives an average of about eighty dollars per month while common labor averages about sixty dollars. Women receive from twelve cents to twenty cents per hour with federal restrictions on hours and conditions of work. Salaried employees receive from forty dollars per month up.

These figures are all calculated on a gold dollar basis. Living costs are about the same as in the United States for corresponding localities.

* * *

Gas-operated refrigerators, the latest development in mechanical cooling, were one of the features of the exhibition held by the American Gas Association at its recent convention in Atlantic City, N. J.

The new gas machines possess many features that will make them popular with the general public, according to Alexander Forward, managing director of the Association. The cost of operation compares favorably with that of other refrigerators, and the gas machines are absolutely noiseless.

These machines employ the absorption or adsorption principle, having no moving parts, which it is stated, distinguish them from the electric machines.

* * *

DON'T MAKE ANY DATES FOR FEBRUARY 14th, 1927!

Every man wants a lot of rules he wants other men to obey.

Albert L. Vodika

IN the November ENAMELIST we published an article on Dry Process Enameling, written by Mr. Albert L. Vodicka, President of the Aetna Porcelain Enameling Company, Chicago. Unfortunately, we received Mr. Vodicka's picture a little too late to run with that article, so are showing it here, along with the following story of his enameling career, which will be interesting to our readers.

Mr. Vodicka writes:

"To give you some facts of my enameling career, I shall have to start with my father.

My father started as a young man, to manufacture high - grade painted china ware, being what they called in German a porcelain maller. He had the misfortune of having two fires in one year and no insurance. So he drifted into the enameling, starting and supervising many plants through Europe. In 1887 he came to this country and started the enameling plant for the L. Wolff Manufacturing Company, Chicago, Ill., enameling sanitary ware by the wet, and later the dry process. Here he stayed until a year or two previous to his death in September 1912. He made several trips back to Europe in his last years, visiting different plants at which he had worked and equipping some of them with dry process enameling equipment for sanitary ware.

At fourteen, I started my career in 1900, under my father, at the L. Wolff Mfg. Co. My intentions were to work through vacation and go back to school, but I found work very interesting and when school time came I decided to stay at work, against my parents' wishes. I worked at all of the different enameling operations and soon filled in as an enameler. At the age of eighteen I was made assistant to my father and given full charge when he resigned in 1910.

I held this position until October 1919 when I resigned and with my first foreman John F. Kurfirst, started the Aetna Porcelain Enameling Company, my present company where we are doing jobbing work on cast iron, by the dry process."

* * *

B. F. Drakenfeld & Co. Inc., New York are moving sometime after the first of the year to No. 45-47 Park Place. This property, consisting of a five story building with basement and sub-basement was recently purchased by B. F. Drakenfeld & Co. Inc., and the structure is now being rebuilt for their sole occupancy.

B. F. Drakenfeld & Co. Inc., is the pioneer company in this country to specialize in Colors, Chemicals and other supplies for the Pottery, Glass and Enameling industries. The growth of the business has corresponded to the development of these industries in this country.

The company has manufacturing establishments at Chicago, Ill. and Washington, Pa., and maintains branch sales offices at East Liverpool, Ohio and Chicago.

The company owns the Wheeling Pulverizing Company and the Mineral, Mining & Milling Corporation, with properties respectively at Wheeling, W. Va., and adjacent to Embudo, N. M.

The officers of the corporation are as follows:
Mrs. B. F. Drakenfeld, Chairman, Board of Directors.
B. F. Drakenfeld, Jr., President,
William Hoffmann, Vice-President,
Oscar F. Zeiller, Vice-President,
Scott J. Courtney, Secretary-Treasurer.

The above, with Dr. R. R. Shively, constitute the Board of Directors.

* * *

The Regent Stove Co., of Wyandotte, Mich., is installing a small porcelain enameling department.

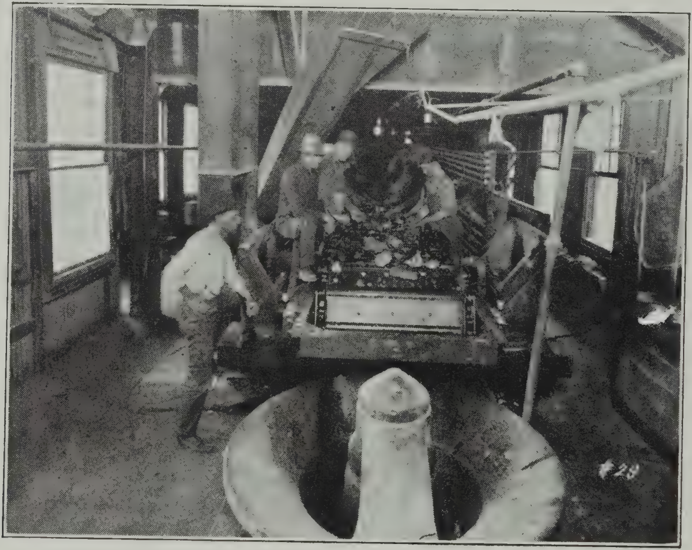
More things come to those who are too busy to wait for them.

Fluorspar—Its Mining and Markets

By E. L. Brokenshire

Oglebay, Norton & Company

FLUORSPAR is calcium fluoride in a ratio of one molecule of calcium to two of fluorine. By weight it is composed of 51.3 per cent of calcium and 48.7 per cent of fluorine. It has a specific gravity of 3 to 3.25; is brittle, having a hardness of 4 and is easily scratched by a knife. In color, fluorspar ranges from pure white and opaque white to various hues of yellow, green, pink, lavender, blue, brown to bluish black. It crystalizes in the isometric system with perfect octahedral cleavages.



Lump Material Passing Over Pickling Belt

Deposits of fluorspar in the United States of known commercial importance are confined to four states, Illinois, Kentucky, Colorado and New Mexico. Of these Illinois and Kentucky supply 80 to 85 per cent of the total production. This

When you come to the end of a perfect day—clean your teeth.

district lies north and south of the Ohio River in Hardin and Pope Counties, Illinois, and Crittenden, Livingston and Caldwell Counties, Kentucky. In Colorado there are two producing properties and in New Mexico several small operations producing intermittently. New Hampshire, California, Arizona, Nevada, Texas and Utah have produced fluorspar but their combined yearly contribution is negligible.

During 1925 a total of 162,369 short tons were shipped to consumers in the United States of which domestic producers supplied 113,669 tons, the remainder (48,700 tons or 30 per cent) came principally from England, Germany and South Africa with lesser amounts from Belgium, China, France and Italy.

Imported fluorspar finds its market principally along the Atlantic coast although some tonnages at times reach Pacific coast ports. The bulk of the Illinois-Kentucky production is consumed west of the Appalachian Mountains. Western fluorspar is consumed principally in the West, but occasionally reaches as far east as Chicago.

The steel industry uses from 80 to 85 per cent of the total American consumption, in the manufacture of open hearth steel. It functions as a slag thinner and hastens and assists the reaction by which sulphur and phosphorus in the metal are absorbed in the slag. About 7.5 pounds of spar are consumed in this country on the average in the manufacture of one long ton of open hearth steel. For steel manufacture the spar is used in the form of "gravel," standard grade containing 85 per cent and over in calcium fluoride and not more than 5 per cent silica.

From 7 to 10 per cent of the total American consumption of fluorspar is used in the manufacture of ceramic products such as enameled and sanitary ware and opalescent glass. For this purpose a high grade ground fluorspar is used having an analysis of 95-98 per cent calcium fluoride and 1 to 2½ per cent silica, ground to about 100 mesh but occasionally specifications require 200 mesh. For this purpose the ground spar must be pure white. It is shipped in box cars in bulk, or packed in bags or barrels as desired by the purchaser.

About 5 per cent is used in foundry cupola practice as a slag thinner, mainly in lump form but not as commonly as in the open

There is no royal road to satisfaction.

hearth steel furnaces. Trade specifications call for lumps varying in size from "nut" up to 12'' with standard grade carrying 85 per cent and over in calcium fluoride and not to exceed 5 per cent silica.

The highest grade of fluorspar is used in manufacturing hydrofluoric acid. Here the trade calls for material analyzing 98 per cent and over in calcium fluoride and maximum 1 per cent silica. Other uses for fluorspar are in the manufacture of aluminum and sodium fluoride for wood preservatives, the refining of lead, antimony and copper.

Crude fluorspar as it comes from the mines is mixed with mud, calcite and fragments of wall rock consisting of sandstone, shale and limestone. It is, therefore necessary to crush and concentrate this material to prepare a marketable product but prior to crushing, the high-grade lump material is separated by passing the ore over a picking belt. The ore which is not separated as lump is crushed, sized and concentrated by means of jigs and tables in the ordinary type of gravity concentrating mill. The average recovery of marketable product from crude ore is about 50 per cent. Most of the ore is mined underground although there are some less important surface deposits. The deepest mining operations are at a depth of 720'. In the deeper mines large amounts of water are encountered which necessitate the installation of large pumping units and extensive timbering. As to the origin of the deposits, consensus of opinion among geologists and students of the field is that the solutions or magmas from which fluorspar and associated minerals were precipitated, were uprising. These solutions are commonly thought to have been hot uprising concentrated liquid emanations from basic magma. Associated with fluorspar at times are barite, sphalerite and galena. Separation of these minerals is effected by jigs and tables; to a less extent flotation has been used to recover the sphalerite. These concentrates are sold to the smelters as a by-product.

* * *

DON'T FORGET—YOU HAVE A DATE FOR MONDAY EVENING, FEBRUARY 14th, 1927!

The crafty man works people; the wise man works with them.

Business Conditions

During the month of November the Enameling Industry operated at a slightly lower average than in November last year.

Plants doing general enameling, such as stove parts, signs, reflectors, and refrigerator linings, were operating at 77% capacity. Sanitary ware plants were operating at 60% and kitchenware enameling plants at 50%.

General business has also relaxed slightly, according to business statistics. C. L. Bradley, in Trade Winds writes:

"The foundations underlying our present degree of prosperity remain solid and they are not being undermined, A review of the past year indicates that its business activity has not been accompanied by the unhealthy symptoms which heretofore have invariably preceded a decline."

A notable condition in the Coal Industry, due to the British Coal Strike, has probably had an effect upon industry in general, in causing coal and steel prices to rise. Due to export demand, our coal production in November rose to the highest peak in history.

Considerable anticipatory orders are evident, based possibly upon the expiration of the present mine wage scale in April and the possibility of a coal strike at that time.

Returning to the Enameling Industry, our readers may be interested in some of the comments made to us by different plants. They are as follows:

"Furnaces operating 24 hours a day."

"Working two shifts; not enough floor space to handle three shifts."

"Good to January first."

"Owing to a strike, we only worked two shifts the last three months."

"Business fair."

"Slow, but good prospects for 1927."

* * *

The Editor of the Enamelist Wishes You a Very Merry Christmas (in every stage) and also A Happy and Prosperous New Year.

Many men who can think, think that they do.

Heating of Porcelain Enameling Furnaces

By Howard L. Brooks

H. L. Brooks

THE advent of electric heat in the field of commercial Porcelain Enameling of Ferrous Metals has met with much opposition, owing to the apparent high cost of electric current when used for heating purposes. One of the first to install an electrically heated furnace for burning ware on a large scale was the St. Louis Brass Company.

C. W. Mehling, who at that time was associated with the company, aided materially at the inception and has been a staunch advocate of electric enameling furnaces ever since. Here and in the Enameling Department of the Portsmouth Stove & Range Company he obtained production records with electric heat that had never been equaled with fuel fired furnaces.

When the American Radiator Company entered the field of Porcelain Enameling several years ago, Mr. Mehling was called upon to put into operation an enameling department for cast iron and sheet steel on a large production and a high quality basis. Electric enameling furnaces were chosen at that time, and when the larger extension was made to this plant this year, electric heat was used for the new Continuous Enameling Furnaces. These furnaces are making records never equaled at any time in the industry.

The advantages of electric heat for enameling are quite apparent, but difficult to prove in dollars and cents. It is hard to prove what percentage of the re-operated and scrap pieces are due to furnace conditions. We must freely admit that these losses are directly traceable at least in part, to the following reasons:

(1) A gassy furnace atmosphere.

Over-refinement is often times coarseness.

Rosiclare Fluorspar

Enamelers Ground Fluorspar

Try it
In your own batch

Order a 125 pound bag for
an actual working test
to be shipped gratis

F. O. B.
Rosiclare, Illinois

OGLEBAY, NORTON & CO., Agt.

Operating and Sales Agents for
Rosiclare Lead & Fluorspar Mining Co.
HANNA BUILDING, CLEVELAND, OHIO

(2) Uneven muffle temperature from back to front and side to side.

(3) Finely divided particles and fragments of refractories blowing about in the burning chamber, due to sudden puffs of the oil burner, causing varying pressures outside of the muffle.

(4) Improper burning temperatures, due to varying oil pressure, caused by inconstant viscosity of oil in line, or collection of sediment, in oil line.

A coal fired furnace is an even greater menace for quality ware, owing to the variation in fuel and dust present in the coal itself.

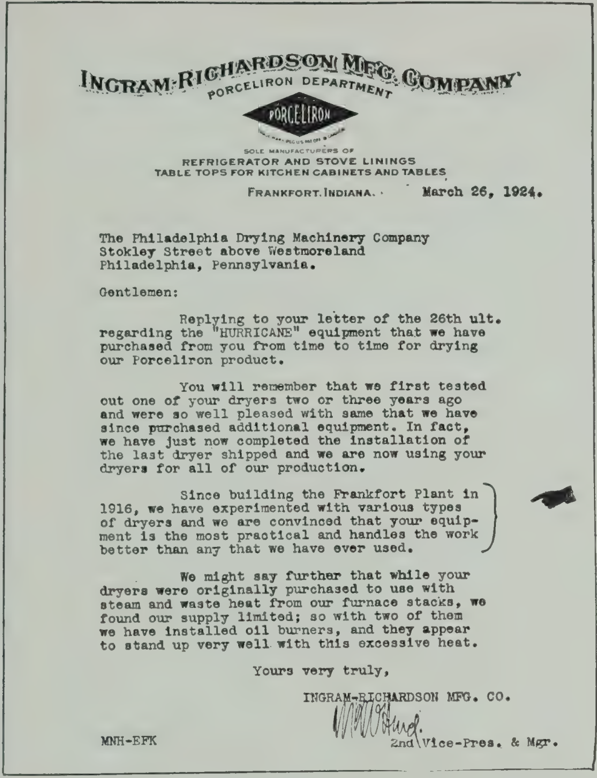
Repairs—hence lost production, are not infrequent with a fuel fired furnace. A sudden cold wave in the small hours of the morning when the steam pressure in the oil tank heater is low, may result in a complete paralysis of production until noon while the entire Maintenance Department get busy with blow torches and Stilson Wrenches.

A Purchasing Agent for a large firm tells me, that since cracking of low grade oil has become so universal, he must take oil which would not formerly be considered for fuel purposes. The Maintenance Engineer of the same company claims that the contents of the bottom of his oil tanks is like An Ohio Road on a Rainy Day.

A Muffle type Enameling Furnace is generally accepted as being the most efficient for a fuel fired furnace and requires frequent repairs. This is not only expensive from a maintenance standpoint, but is even more apparent at the end of a busy month, when a furnace has been "down for repairs" for five or six days. We all know what an endless time it seems to take an enameling furnace to cool down sufficiently for any extensive repairs. It should be brought up to temperature slowly, so as not to endanger the refractories with sudden temperature changes. Any fine morning one may enter his enameling department to find that the new enameling furnace, which looked so fine the night before, has just been blown up; with a couple of thousand dollars worth of brick and mortar laying in a heap on the floor just inside the furnace door.

In modern dances a step in time is too late.

Why "Hurricane" Dryers were preferred



INGRAM-RICHARDSON MFG. COMPANY
PORCELIRON DEPARTMENT
PORCELIRON
SOLE MANUFACTURERS OF
REFRIGERATOR AND STOVE LININGS
TABLE TOPS FOR KITCHEN CABINETS AND TABLES
FRANKFORT, INDIANA. March 26, 1924.

The Philadelphia Drying Machinery Company
Stokley Street above Westmoreland
Philadelphia, Pennsylvania.

Gentlemen:

Replying to your letter of the 26th ult. regarding the "HURRICANE" equipment that we have purchased from you from time to time for drying our Porceliron product.

You will remember that we first tested out one of your dryers two or three years ago and were so well pleased with same that we have since purchased additional equipment. In fact, we have just now completed the installation of the last dryer shipped and we are now using your dryers for all of our production.

Since building the Frankfort Plant in 1916, we have experimented with various types of dryers and we are convinced that your equipment is the most practical and handles the work better than any that we have ever used.

We might say further that while your dryers were originally purchased to use with steam and waste heat from our furnace stacks, we found our supply limited; so with two of them we have installed oil burners, and they appear to stand up very well with this excessive heat.

Yours very truly,

INGRAM-RICHARDSON MFG. CO.

2nd Vice-Pres. & Mgr.

MNH-EFK

The Opinion of a User

Read what the Ingram-Richardson Mfg. Company have said as to the servicability of "HURRICANE" Dryers for Porcelain Products.

The remarkable savings in cost of operation are such that once a "HURRICANE" is installed, others follow until the entire production of the plant is "HURRICANE" Dried.

"HURRICANE" Dryers are built for all types of Ceramic Materials and for Enameled Ware. Capacities are guaranteed and we can supply on request, all information necessary for a comparison of "HURRICANE" with your present drying cost.

The Philadelphia Drying Machinery Co.

Stokley Street above Westmoreland Philadelphia, Pa.

HURRICANE
Ideal Drying Every Day

Special Agents:
Ferro Enamel Supply Co.
Cleveland, Ohio

New England Agency:
Hurricane Engineering Co.
53 State St., Boston, Mass.

Normally an enameling furnace muffle cannot be expected to last over two, or at the most three years, burning temperatures ranging around 1600 degrees F. Within the first six months or a year the furnace will have to be cooled down and the muffle "pointed up," cracks filled in, or perhaps a tile reset. After the second year more extensive repairs will be necessary. The furnace will probably be operated for some time with a rather badly leaking muffle, resulting in such defective ware before a complete new muffle is installed, at a cost of fifteen hundred to two thousand dollars.

Some of our largest business enterprises are turning toward daylight work. Most of the personal errors in any manufacturing process are made at night. Men do not work as well during the night watches as in the day time. Careful supervision is not provided at night. Most enameling furnaces are still operated 24 hours per day, but the number is diminishing every year. If the enamel furnace is operated during the day only, a fire should be maintained, so that the furnace will be thoroughly heated through in the morning. If the temperature is allowed to drop too low every night and over the week end, the cost of repairs is increased. Go into your enameling department on a Sunday when the furnaces are cooling and you hear the refractories cracking like ice on a pond of a cold winter's evening.

The story is so different with electric heat, the electric elements are so placed in the furnace and so regulated with Pyrometic temperature control, that no attention to the heat regulation is necessary. The burning chamber cannot develop "hot spots" and is the same temperature in one end as the other. There is little movement in the atmosphere of the furnace after the door is closed. No foreign matter is there to damage the sticky honey-like surface of the fusing enamel and the ware comes out as clean as it was when it went in.

The furnace may be shut off at the end of the day and the current automatically turned on by a clock one-hour before starting time. No adjusting is necessary as in the case of an oil furnace. The furnace comes up to the proper temperature and "cuts out." The electric furnace is so well insulated and so tight that the temperature drop is not nearly that of a fuel fur-

½ of 1%

Less than 1% variation in fineness of the product from the Hardinge Conical Pebble Mill and new Air Classifier!

Can you equal this record for fine grinding feldspar—96% through 325 mesh?

Write us for details.

HARDINGE COMPANY
YORK, PENNSYLVANIA
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NEW YORK, N.Y., 120 BROADWAY
SALT LAKE CITY UTAH: CONTINENTAL BANK BLDG.

WORKS AND
MAIN OFFICE
YORK, PENNA.

CABLE
ADDRESS
"HARDINGMIL
NEW YORK"

nace. The heat losses caused by leakage of stack drafts, holes for oil burners and natural cracks and crevices due to high flue temperatures are inevitable in the best constructed fuel furnaces.

The weight of the refractories in an electric furnace is less than one-third of that of a fuel furnace. The highest heat in the electric furnace is that of the heating ribbons, which approximate 50 degrees higher than the ware. The heat in the combustion chamber on an oil or gas fired furnace may be 800 to 1000 degrees hotter than the ware. A heavy bulk of refractories are required to withstand this heat. It takes many hours to heat this weight thoroughly, as must be done before the furnace is operated to capacity.

Little wonder that frequent repairs are needed with 2600 degrees Fahr. changing to 700 or 800 and 600 degrees over the week end.

Repairs on electrically heated enameling furnace are infrequent indeed. Electric enameling furnaces operating steadily for three or four years without repairs are not uncommon. If the elements are installed with the proper insulators, so that the ware cannot come in contact with them, the possibility of burned out elements is slight, If for any reason, an element does burn out, the furnace can be cooled down with the aid of a few electric fans in a short time, and an electrician can go into the furnace replacing the elements in about an hour. The whole repair can be taken care of over the week end and the furnace ready for production on Monday morning as usual.

Owing to the numerous improvements which have been made in both electric and fuel furnace construction over the last four or five years, the compiling of accurate figures on furnaces built according to present day design, is very difficult. Figures on production for actual working hours of each furnace make an interesting comparison. Accounts vary widely as to the cost of handling fuel oil from the time it is delivered on the track siding until it is burned in the furnace. These matters are of interest to every one of us and will bear serious consideration and thought.

Editor's Note—this is the first of a series of articles on Porcelain Enameling furnaces; the next will appear in an early issue.

The trouble with the installment plan is that most folks don't plan.

Perfect Inspection!

Nothing short of perfection satisfies GOHI inspectors. Sheets which bear imperfections so minute as to be almost invisible to the untrained eye are rejected.

At every step in manufacture, GOHI, is under the watchful eyes of trained inspectors, skilled in their craft. The combined experience of our organization is, we believe, without parallel in the industry.

When you buy GOHI you are assured of having a product which will be as free from imperfections as it is humanly possible to make it.

If you are having enameling difficulties, we shall be glad to tell you how GOHI will improve your product.

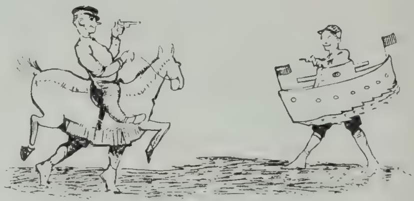
The Newport Rolling Mill Company

Newport, Kentucky

No More War—Army and Navy Tie

SPECIAL WIRE TO THE ENAMELIST: Realizing the way the enamelers depend on us for reliable information on all important subjects, we again, at great expense (have you ever been to Chicago), sent our sporting editor to cover the Army-Navy game.

Upon arriving in Chicago we were first presented with a cork-screw to the city. In the old days, the Mayor gave important visititors the key to the city—now the first cop you meet hands you a corkscrew.



The game was a corker, probably the most spectacular ever played. Imagine a beautiful Fall day, a tremendous stadium filled to the brim with 110,000 tax payers (mostly taxes on theatre tickets and automobiles).

First the Navy made two touch-downs and everybody felt sorry for the Army—then the Army made two—then another and everybody felt sorry for the Navy—then the Navy tied the score and in the gathering darkness both teams made frantic efforts to win.

The score just satisfied us, because it would have been a shame for either our Army or Navy to ever lose.

Before the game, the Navy goat was introduced to the Army mule but neither one seemed to be looking for a fight; in fact, right there we might have known the game was going to be a tie.

Between halves, three young prospective naval officers trotted out, fixed up as destroyers. They were promptly pursued by three army hopefuls disguised as cavalrymen. Immediately the familiar sound (to Chicago ears) of guns showed that the Army-Navy battle was on again. As the Armybegan to retreat, a huge tank rolled out, turning the tide against the Navy.

Reinforcements came immediately in the shape of a much larger destroyer which put on a merry battle with the tank, footballs being used as ammunition.

Breathe deep—think right—happy be.

REG. U.S. PAT. OFF.

R&H

A1

CERAMIC CHEMICALS
MINERALS, OXIDES
and
SERVICE

Quality that contributes to the excellence of your production

The
ROESSLER & HASSLACHER CHEMICAL CO.
709 SIXTH AVENUE, NEW YORK

Boston
New Orleans
Chicago
Philadelphia
Trenton
Cleveland
Pittsburgh
Baltimore
Kansas City
San Francisco

"America's Leading
Ceramic Material House"

One Million Dollars

THERE must be merit back of a company whose sales built to to more than a million a year in the comparatively short time we have been in business

Merry Christmas

THE
FERRO ENAMEL SUPPLY CO.
Cleveland, Ohio

HERE'S TO 1926

One Million Wishes

REALIZING this never could have happened without the help of our many good friends, we send you a million good wishes for a Merry Christmas

◆

Happy New Year

◆

THE
FERRO ENAMEL SUPPLY CO.
Cleveland, Ohio

HERE'S TO 1927

At this point, H. M. Dawes, V. P. of these yere United States strode from the Navy side to the Army side to show that the Republican administration was absolutely neutral—too many voters at this game to show any partiality.

Most of the pre-war veterans at the game didn't realize the great thought hidden behind the playful giants who were smacking each other down on the field. Here's the thought—a new idea for World Peace. Why do we have War? Because of rivalry and jealousy. Do you ever have more rivalry than between colleges? Certainly not. Do they go to War? No, they fight it out on the football field—it's more dangerous.

HI SAY NOT SO ROUGH!
YE EDITOR

Now, here's the big idea. Let's replace war with football. If Russia gets into an argument with Chili over salad dressing supremacy, simply rent the Chicago Stadium and make enough money to pay off their last war debt.

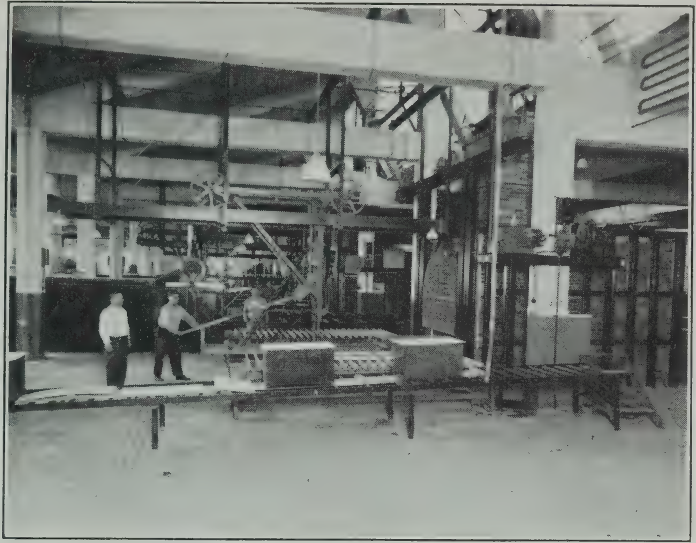
Coolidge could be referee, King George umpire, Mussolini field judge and the editor of the Enamelist head lineman. Simple idea, isn't it? Wonder the Democracts never thot of it.

Among prominent men at the game were governors of many states, admirals, generals, Nick Longworth, John Fry of the Detroit-Michigan Stove Company, H. C. Blakeslee of the Kalamazoo Stove Company, Will Mahoney of the Humphreys Mfg. Co., and I suppose a 100% representation of the Chicago Enamelers Club.

* * *

MILL ROOM FOREMAN—Capable man as Foreman of Mill Room. To take charge of making and grinding the enamel. Must be experienced. Good opportunity. Apply to BOX JS, ENAMELIST.

Debt is a spectre, always lurking in the path of the spender.



The above view shows one of the five enameling furnaces operating in the plant of the largest producer of electric refrigerators.

NORTH AMERICAN
Oil Burning Equipment

is being used on these five furnaces, and has been chosen for use on ten new furnaces now being installed. The reason for this is obvious.

North American Oil Equipment is standard in the enameling industry.

Write for prices and information.

The North American Manufacturing Co.
Cleveland, Ohio

We are sure the many friends of J. C. DeVol, A-B Stove Co., Battle Creek, Mich., will be pleased to learn of the recent addition of a new daughter to his family.

* * *

In view of the Holiday Season being just ahead, we knew that the cards, such as we are enclosing in this ENAMELIST, will come in handy for some of our readers. If an extra supply is wanted for the New Year's Season, write us for them.

* * *

A New York concern has the following equipment for sale, which is suitable for dial enameling: American Gas Furnace, Maxon Premix Burner, inside dimensions 18x36; complete spraying equipment; three-jar Abbe Mill; 100 pound Abbe Mill.

If any of our readers are interested in this equipment, we will be glad to put them in touch with this concern.

* * *

At a recent meeting of the Benjamin Electric & Mfg. Co.' announcement was made that Mr. A. E. Clarke is leaving that company on January 1st, 1927. Mr. Clarke's other interests in Des Plaines, Ill., have become so extensive that he has found it necessary to give up his work at the Benjamin plant.

He will be greatly missed by many of the employees who have served under him during his 18 years of work in building up the present organization. Mr. L. R. Tansley will succeed Mr. Clarke, as Assistant to the Works Manager, Mr. E. A. Drake.

* * *

FRESH FLORIDA ORANGES—Fresh Sweet Florida Oranges $3 per box of three hundred large size. Sound fruit and satisfaction guaranteed or money back. We pay express charges. A box of these makes an appreciated Christmas gift.

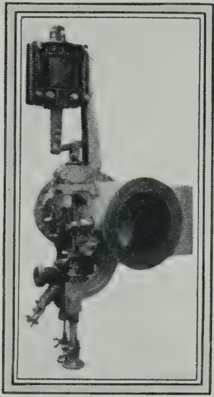
Remit with order.

ACME FARMS, Gainesville, Florida.

Shrinking violets do not line the path of success.

A Constant Control
on temperature and combustion

Wherever heat application enters into any manufacturing process, a constant control of temperatures is not only desirable, but **necessary** for uniform results in producing the finished product.



The Ryan Automatic Temperature and Combustion Control makes heat treating operations and boiler firing wholly automatic. It operates continuously, day and night, with a self-acting, unvarying accuracy that removes every element of doubt or chance. The Ryan Control **regulates** and **controls** while pyrometric devices merely record.

Ryan equipment is today paying its cost many times over, in industrial plants, where its clocklike precision and absolute dependability saves thousands of dollars annually.

The constant check afforded by the Ryan Automatic Control cuts down fuel costs and eliminates wasteful production practices.

* * *

A list of prominent manufacturers using the Ryan Control will be forwarded upon request.

* * *

Ryan Engineers are ready to make engineering surveys and recommendations on the installation of heat-treating equipment to meet your specific requirements. Ryan Products are the result of 20 years of experience in the design and building of standard and special heating and control equipment. Fully illustrated Bulletins will be mailed, without obligation, on request.

F. J. Ryan & Company, 3711 Wissahickon Ave., Philadelphia

Twelve branch offices located at strategic positions throughout the U. S.

RYAN

INDUSTRIAL HEATING EQUIPMENT

The dove of Peace at present carries a pretty substantial "bill."

Here's the Catch that Won the Nickle Plated Derby

SOMETIME ago we announced a prize for the season's best fish-story, supported by pictures. We feel that Mr. H. F. Zarth, of the American Range Corporation, Shakopee, Minn., should win the prize. Note his pictures, shown here.

Snapshot Number one is a two hours' catch, made by Mr. Zarth, and three other fishermen. Number two is a three hours' catch, and in this picture is also shown Mr. Anton Geiger, Purchasing Agent for the American Range Corp., and some of the men from the enameling shop.

Mr. Zarth states that these are only small lots, compared to what they usually get.

Life is a ceaseless process of making selections.

FOR ENAMEL GRINDING

PATTERSON
PEBBLE MILLS
lined with highest grade porcelain blocks. Either pebbles or porcelain balls for grinding media

PATTERSON
motor driven
PEBBLE MILLS
supplied complete with special silent chain drives and high torque motors

The PATTERSON
FOUNDRY & MACHINE CO.
Richard L. Cawood, President
EAST LIVERPOOL, OHIO

New York *Chicago* *Los Angeles*

This group represents the highest type, and one of the most intelligent groups of men that has ever been assembled from any one industry.

In other words, this group shows some of the Foremen and Job Foremen at the Moraine City plant of the Delco-Light Co.

The extremely handsome man at the right-hand end of the second row is Mr. Harry Riggs, and the equally handsome man sitting fourth from the same end of that row is F. E. Anderson.

Mr. Anderson is in charge of the Porcelain Enameling plant, while Mr. Riggs is Superintendent of Plant No. 2 of the Delco-Light Company.

* * *

The Mid-West meeting of the American Ceramic Society was held in Urbana, Illinois, on November 19-20th, in connection with the Illinois-Ohio Football Game, when Ohio defeated Illinois 7-6.

The general topic of discussion at the meeting was, "What the University is Doing and Can Do in Research." L. H. Menne, of the Quincy Vitreous Enamel Co., Quincy, Ill., spoke on Enamel Problems.

Enameled Products Everywhere Reflect the Superior Quality of

TONCAN ENAMELING SHEETS

No one is better fitted to judge the quality of an enameling base than those who use it in their product. We point with pride to the manufacturers who are using Toncan, and who have used it continuously since the day they first tested it in their product.

For stoves, refrigerators, tables and all forms of vitreous enameling, users have found no equal to Toncan Metal. That is the reason why it is used today as the base metal for such a great portion of enameled products.

Write for samples and make your own comparative tests.

Central Alloy Steel Corporation, Canton, Ohio

New York
Syracuse
Cleveland
Philadelphia
Pittsburgh
Los Angeles
Chicago
Detroit
Portland
San Francisco
Indianapolis
Kansas City

TONCAN METAL

Porcelain Enamel Digest

The November meeting of the St. Louis District Enamelers Club was held on Nov. 30th at the Belleville House, Belleville, Illinois with a very large attendance—50 in number.

Mr. W. V. Knowles, Chairman of the Program Committee, A. C. S., was guest and the symposium which is to take place between the St. Louis and the Chicago clubs at the Detroit meeting was discussed.

Mr. MacDougal of the Coonley Mfg. Co., Cicero, Illinois presented a paper, "OPERATING OF A CONTINUOUS ENAMELING FURNACE," and accompanied by his paper was a moving picture showing the "BEEMACK CONTINUOUS FURNACE." In connection with this The Laclede Gas Light Co. of St. Louis represented by Mr. Thompson, spoke on gas as fuel and gas burners.

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Mr. H. B. Lindsay, of the Norton Co., Worcester, Mass., with Mrs. Lindsay, will sail on January 12th, on the S. S. Franconia for a Southern Hemisphere cruise around the world, returning June 2nd.

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Mr. Clayton S. Houpt, formerly with the Wrought Iron Range Company of St. Louis, is now with the Ferro Enamel Supply Co. of Cleveland, Ohio.

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The enameling industry will be sorry to learn of the serious illness of Mr. Hogenson Senior, of the Chicago Vitreous Enamel Products Company. We are hoping for his early and complete recovery.

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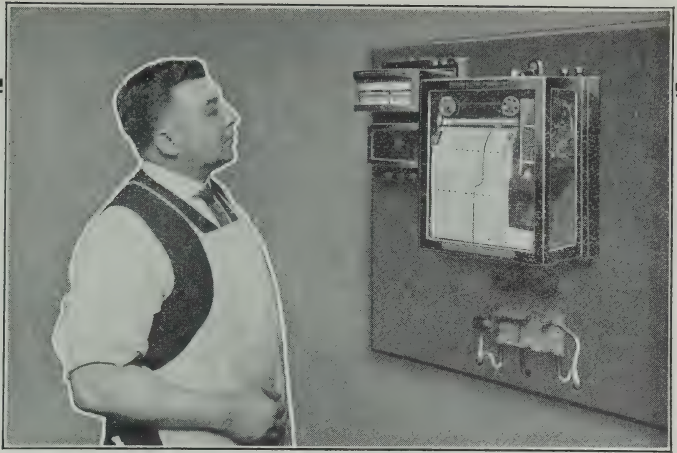
GOOD ENAMELER: Experienced on cast iron or sheet steel wants position as day or night foreman. Box E. ENAMELIST.

Daring driver; speeding great; telephone pole; Golden Gate.



Improve Your Ware by studying the Record of Every Heat

GOOD enameling results demand that the oven temperature be brought to the vitrifying point at the proper rate, and held at that point for a definite length of time. Brown Recording Pyrometers guide the burner in developing the proper temperature, maintaining that temperature over the correct period; and supply evidence that the proper schedule was followed.

Study of such records in the light of results obtained have demonstrated their value in improving production quality and economy in many plants. Brown Recorders offer many advantages in this service. *Write for Catalog No. 15.*

THE BROWN INSTRUMENT CO.
4595 Wayne Avenue, Philadelphia, Pa., U. S. A.

District Offices: Located at New York, Boston, Pittsburgh, Columbus, Cleveland, Detroit, Chicago, Indianapolis, Birmingham, St. Louis, Tulsa, Houston, El Paso, Los Angeles, San Francisco, Denver, Salt Lake City, or Montreal.

Brown Pyrometers

"To Measure is to Economize"

Mr. John Pohs recently installed and is now operating a porcelain enameling plant in Seattle, Washington. It is known as the Pioneer Enameled Steel Products Company.

* * *

In a recent report before the Northern Illinois Utilities Committee, Prof. C. W. Parmalee, Ceramic Department, University of Illinois, gave a discussion of the work on the ageing of porcelain in electrical insulators. Also on the research on the deterioration of fire-brick in boiler furnaces, and the checker work in water gas retorts.

* * *

Mr. Edgar Davis will have charge of the new enameling plant at the Servel Corporation, Evansville, Indiana.

* * *

Mr. John Tuthill has sold his interests in the Philadelphia Porcelain Company to William Paul. Mr. Tuthill will soon be established in another line of business.

* * *

We understand that The Active Stove Mfg. Co. has been established, at Sinking Springs, Pa., by E. Witman and Harry Stott, to manufacture stoves, ranges and heating devices.

* * *

We are very much pleased with the following letter from Mr. Ernst Ohlsson, of Aktiebolaget Separator, Stockholm, Sweden. Mr. Ohlsson writes: "I thank you for the extra copies of your excellent publication, the ENAMELIST. I always read the ENAMELIST with great interest, and the copies are always sent over to our other enameling plant at Olafstrom for them to read."

* * *

The Mid-West Stove Company has been organized in Belleville, Illinois, and will start operations immediately. Mr. Gus Oesterle will have charge of the enameling department. We wish Mr. Oesterle the greatest of success in his new shop.

* * *

Mr. Eric Schabacker, on November 12, 1926, became the proud father of a baby daughter, Jean Catherine. Mr. Schabacker is associated with Mr. H. R. ("Spike") Spencer, in the Erie Enameling Company, Erie, Pa.

* * *

Mr. Zeno Deurvorst writes from Holland that his company, Maatschappy' Van Berkel's Patent, is installing a very modern porcelain enameling plant. He states their electric furnace is now completed, and is a real beauty. Mr. Duervorst recently visited the United States, to inspect a number of the enameling plants here.

A career is anything you work at without feeling imposed on.

ARMCO

INGOT *IRON*

ENAMELERS who use ARMCO Ingot Iron get more than a purer, uniform, virtually gas-free sheet. They get results—the yardstick by which the finished product is always measured.

The American Rolling Mill Co.

Middletown, Ohio

Export: The ARMCO International Corp.
Cable Address ARMCO, Middletown

ARMCO TRADE MARK **INGOT IRON**
The Purest Iron Made

TO BE TIED OUTSIDE

Dedicated to Merry Christmas

Some may long for the soothing touch
Of lavender, cream or mauve;
But the ties I wear must possess the glare
Of a red-hot kitchen stove.
The books I read and the life I lead
Are sensible, sane and mild,
I like calm hats and I don't wear spats—
But I want my neckties wild!

Give me a wild tie, brother,
One with a cosmic urge!
A tie that will swear
And rip and tear
When it sees my old blue serge.

Oh, some will say that a gent's cravat
Should only be seen, not heard;
But I want a tie that will make men cry
And render their vision blurred.
I yearn, I long for a tie so strong
It will take two men to tie it;
If such there be, just show it to me—
Whatever the price, I'll buy it!

Give me a wild tie, brother,
One with a lot of sins!
A tie that will blaze
In a hectic gaze,
Down where the vest begins.

—*J. M. C. Scranton.*

* * *

GOOD OPPORTUNITY: First-class experienced enameler wanted, to operate sheet steel and cast iron enameling plant on stove work. State previous experience, training, and salary desired. Write at once. Box L. ENAMELIST.

* * *

WANTED: Assistant Foreman, Ceramic Engineer preferably, for sheet steel and cast iron stove enameling shop. Write full details, regarding experience and salary expected. BOX Q, ENAMELIST.

* * *

POSITION WANTED: Practical Enameler, educated in Ceramics in Germany, wishes a permanent position in the United States, with opportunity for advancement. BOX T. ENAMELIST.

The key to success seldom fits a night latch.

Good Bye Old Style Opacifier—

All letters from
NEW Customers
for OPAX sound
LIKE THIS→

> We are tired of the increasing and fluctuating price of other opacifiers and enclose our order for OPAX.

T.A.M.
OPAX

Welcome OPAX

All letters from
seasoned USERS
of OPAX sound
LIKE THIS→

> At the outset, the price was attractive. By experience our saving in raw material costs has been astonishing. Beyond that, our enamel is whiter, less brittle and has a better gloss. Enter standing order for OPAX.

OPAX is Zirconium Oxide. It makes a whiter, opaquer, tougher and glossier enamel. It is inert, irreducible, non-poisonous and unvarying.

THE TITANIUM ALLOY
MANUFACTURING Co.
Works at Niagara Falls, N. Y.
CERAMIC MATERIALS DEPARTMENT R. D. LANDRUM, GENERAL MANAGER
6007 EUCLID AVENUE, CLEVELAND, OHIO

Bits of Frit

SUGGESTION FOR ENAMELERS

Suitor: "There's only one thing I'd rather accomplish than marry your daughter, sir."

Father: (warily): "What's that?"

Suitor: "Handle a niblick the way you do, sir."

Father: "Aw—shucks—well, come on out to lunch."

DEPENDABLE

Nice Lady Caller (to little boy): "But you don't expect to get everything you ask for on Christmas, do you, Jimmie?"

Jimmie: "Sure I do—my Daddy's a yes-man."

* * *

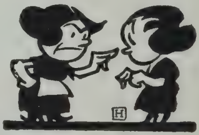
At the London Medical Exhibition, bread which will keep for six years without deteriorating was exhibited, thus beating by a substantial margin the previous college-students' record of a four years' loaf.

—*Life.*

A MINOR PROBLEM

Barbara: "I can't decide what to get for my husband's Christmas present."

Marjorie: "Can't you think of anything you need?"



PRECOCIOUS

Proud Father: "I just received a letter from my small son—the first he ever wrote."

Friend: "How much did he ask you for?" —*Life.*

Mountains are made to climb.

Sand: Many attempts have been made to use a substitute for flint shot, with indifferent results, and from our experience, we recommend the use of the best flint shot, since it will be less expensive in the end.

Disinterested Commendation

WE reproduce a paragraph from a page of advice to enamelers published in a recent issue of the Chicago Vitreous Enamel Product Company's monthly house publication.

As large manufacturers of up-to-date enameling equipment and supplies, it is to their advaniage to have their customers use the abrasive that will give metal surfaces the best footing for their enamel.

They also practice what they preach, as they use FLINT SHOT exclusively in their own sand-blasting department.

Sandblast Equipment Manufacturers *Also commend Flint Shot.* Their *erecting* engineers like to start new equipment with Flint Shot, because it does such clean, rapid work that it insures the customers' prompt OK on the installation.

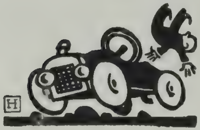
UNITED STATES SILICA Co
122 South Michigan Ave. Chicago

FLINT
It PAYS to Use
SHOT
TRADE MARK · REGISTERED
FLINT SHOT MAGNIFIED

We are now all set for the birth of a new aristocracy based on, "My father owned the first airplane in this section of the country."

—*Life.*

* * *



Ruth and John, side by side,
Went out for an auto ride;
They hit a bump, Ruth hit a tree,
And John kept going Ruthlessly.

* * *

THE PAST

Alice: "Can you do any of the old-fashioned dances?"
Virginia: "I think I remember the Charleston!"—*Life.*

* * *

Eleanor (furiously): "The beast!"
Joan: "Is he trying to flirt with you?"
Eleanor: "No; he won't."—*Life.*

* * *

"How do you like your egg, madam?"
"Oh—just so so—I married him on a bet."

* * *

Senior: "Do you know that red stuff on your lips will give one septicaemia?"
"Co-ed: "Try and get it!—*Life.*

* * *

FORM 893-16G

"Harry is mighty businesslike. I wonder how he broke the news to Phyllis's father after their secret marriage."

"He simply wrote on his business card: 'Please find your daughter attached hereto.' "

—*American Legion Weekly.*

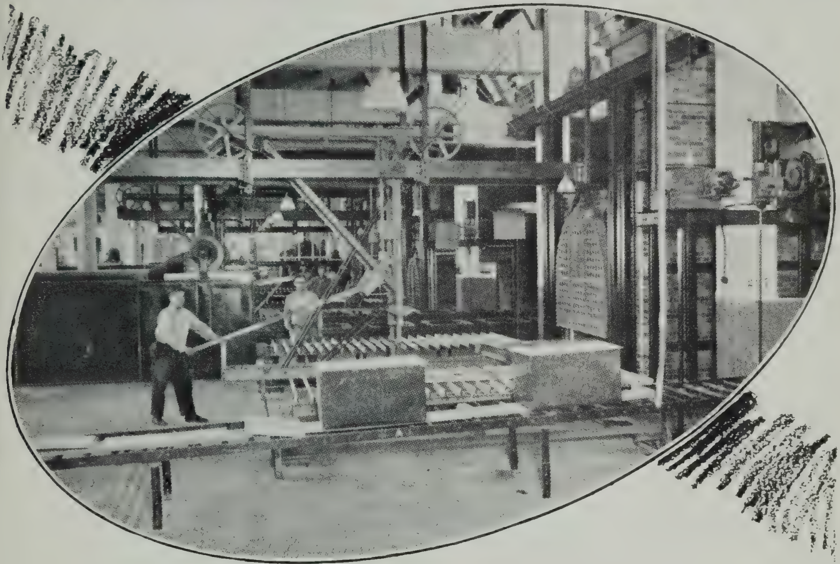
* * *

RESIGNATION

Kitty: "Oh, well, it's the Christmas spirit that counts."
Betty: "Who sent you a card instead of a present this time?"—*Life.*

It does no good for a man to stop, look and listen unless he thinks.

Three - then two
Now *ten more* Alundum Muffles



Last year one of the world's largest manufacturers of electric refrigerators installed a total of five Ferro enameling furnaces equipped with Alundum muffles of the Manion V-bottom design. The performance of these five muffles has been so satisfactory that ten additional have how been ordered for the concern's new $20,00,000 plant.

NORTON COMPANY, WORCESTER, MASS.

NORTON
REFRACTORIES

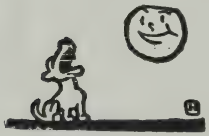
CAUTIOUS

The colored parson was to have his Christmas dinner with the family of Sam Jackson.

"Which does yo'-all prefer, Pahson," San asked, "baked ham or roas' chicken?"

"Son," replied the preacher, "it am extremely difficult fo' me to express a pref'rence atween de two. Better be on de safe side an' have bofe ob 'em."

* * *



Willie: "What's your dog's name?"

Freddie: "Crystal."

Willie: "That's a funny name. Why do you call him Crystal?"

Freddie: "Because he's always on the watch."

—*Farm Journal*

* * *

Customer (in haberdashery): "I wish to see a tie in which blue predominates."

Clerk: "Here's one in which blue predominates, but the purple in it predominates even more, I think."

—*Boston Transcript.*

* * *

Woodman, cut that tree;
Spare not a single bough.
I carved a name upon it,
But I love another now.

AT THE CARD COUNTER

She was tiny, wide-eyed and bewilderingly pretty and she fluttered from one box of Christmas cards to another with a shy indecision. Then I saw the section she hovered over was offering the type of card which comes under the general heading of, "To my sweetheart." My romantic nature was touched . .. I devoted myself exclusively to reading the cards over her shoulder and hoping that she would make a wise choice. Finally one tiny hand rested on a charming little card. It read, "Merry Xmas. You know I love you." And with a sweet smile, she said, "I'll take half a dozen of these, please."

—*Life.*

It is easier to scold than to lead the way.

ASBESTOS PRODUCTS
for Enameling and Allied Industries

Asbestos Fibre
Asbestos Yarn
Asbestos Cord
Asbestos Thread
Asbestos Cloth
Asbestos Clothing
Coats
Pants
Aprons
Mittens
Gloves
Patches

This is the famous reinforced mitt which is being used by the biggest enameling companies in the business. In a comparative test it lasted 100 hours longer than the next best mitt. Let us send you a trial pair.
Also furnished in reversible style, re-inforced both sides.

High Temperature Insulation for Hurricane Dryer and other makes.

High Temperature Blocks also 85% Magnesia Blocks.

Write for descriptive list and prices of full line.

Keasbey & Mattison Company
AMBLER, PA.

Cleveland Office
1160 West 11th St.

The Largest Plant of its Kind in the World.
If it's made of ASBESTOS we've got it!

IT IS ALWAYS
Economical to use
Drakenfeld's Oxides

because we can guarantee you the right shade using the right percentage of oxide. Give us a chance to prove this by submitting one or more samples of your colors to us for matching.

B. F. DRAKENFELD & CO., INC.
50 Murray Street New York City

Entirely Successful

The new technique in the compounding of white enamels for sheet steel, recently developed by the Ceramic Research Department of the Metal & Thermit Corporation, has been tested and found entirely successful.

Already numerous firms have proven that although the use of expensive opacifiers is largely or entirely eliminated the new process enamels have equal opacity, equal gloss and working properties, improved strength plus a greater acid resistance, and they can be made at a much lower cost.

Complete formulas given on request.

Metal & Thermit Corporation

Ceramic Department

Homer F. Staley, Mgr. R. R. Danielson, Director of Research

120 Broadway, New York City

Thank You

In 1925 we broke all previous records for enamel frit shipments. Our 1926 sales will easily be fifty per cent greater.

For this we thank you and wish you a

Merry Christmas

In 1927 we are going to make new records because our organization and facilities are better than ever before.

Always buy from Bob and you are sure to have a

Happy New Year

The Ferro Enameling Company
Cleveland, Ohio

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